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ABSTRACT

The units contained in this guide are intended primarily as resource materials to assist middle school teachers in identifying units into which career awareness concepts can be infused and also in identifying instructional activities that correlate basic skills and career education objectives. Introductory information includes a definition of career education and an outline of goals for middle school career awareness. There are 8 units relating to mathematics, 9 science-related units, 19 units relating to social studies, 2 units relating to language arts, and 1 unit relating to health and physical education. Each unit contains the following: An overview, content outline, unit objectives, and unit description, which provides criterion referenced objectives, learning activities, and a list of materials. Materials listed are teacher references, children's books, study prints, kits, films, filmstrips, records and songs, and classroom materials and equipment used in the activities. Additional evaluation suggestions are included for some units. Units are listed according to career clusters, and a list of unit authors and their schools concludes the guide. (TA)

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CAREER EDUCATION RESOURCE UNITS

MIDDLE SCHOOL: VOL I

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CAREER EDUCATION RESOURCE UNITS

Developed by:

Teachers of Newark School District
Newark, Delaware

and the

Career Education Instructional System

A K-12 Exemplary Project in Career Education
Conducted Under
Part D of Public Law 90-576

The project reported herein was performed pursuant to a grant from the Office of Education, U.S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express freely their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore, necessarily represent official Office of Education position or policy.

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TABLE OF CONTENTS

	Volume	-	Page
Foreword	I	-	v
Introduction	I	-	vi
A. MATHEMATICS			
1. How Banks Serve You	I	-	2
2. Food Service	II	-	199
3. Everyday Mathematics: Measurement and Spending Money (LA)	I	-	11
4. Consumer Product Testing	II	-	194
5. Mini-Opportunities: Self Help Work Program	II	-	250
6. Principles of Flight	I	-	99
7. Restaurant Operation	II	-	197
8. The Automobile Mechanic	II	-	125
9. The Statistician in Sports	I	-	19
10. Search for America (Math)	I	-	25
11. Growth and Development (Math)	I	-	32
12. Man and the City (Math)	I	-	36
13. Man and Nature (Math)	I	-	44
B. SCIENCE			
1. The World of Plants	I	-	49
2. Heredity and Environment (LA)	I	-	67
3. Weather	I	-	73
4. Plants	I	-	82
5. Ecology in Action	I	-	94
6. Oceanography	I	-	96
7. Principles of Flight	I	-	99
8. Food Service	II	-	199
9. Ways With Plants	I	-	101
10. Wildlife Conservation	I	-	103
C. SOCIAL STUDIES			
1. A Means For Satisfying Human Wants	I	-	105
2. Kinds of Work People Do	I	-	123
3. Getting What We Need	I	-	130
4. Using Government To Solve Workers Problems	I	-	137
5. Successful Career Exploration For the Unsuccessful Student	II	-	2
6. Food Service	II	-	199
7. Basic Skills	I	-	141
8. Values	I	-	147
9. Comparing Climate Areas of Europe and the United States	I	-	152
10. You As Consumer And Producer	I	-	165

11. Careers in Government and Politics: 1974 Election	I	-	171
12. Consumer Product Testing	II	-	194
13. Ecology In Action	I	-	94
14. Heroes and Idols	I	-	173
15. Heroes and Legends	II	-	20
16. Knowing Myself	I	-	175
17. Newspaper Arts and Crafts	II	-	25
18. Newspaper Elective	II	-	26
19. Oceanography	I	-	96
20. Selling Yourself	II	-	28
21. Boating Safety and Seamanship--U.S. Coast Guard Auxiliary	II	-	246
22. U.S. History and Government	I	-	180
23. Who Am I and What Can I Do About It	II	-	51
24. Wildlife Conservation	I	-	103
25. Search For America (S.S.)	I	-	181
26. Growth and Development (S.S.)	I	-	187
27. Man and the City (S.S.)	I	-	189
28. Man and Nature (S.S.)	I	-	192

D. LANGUAGE ARTS

1. Successful Career Exploration For the Unsuccessful Student (LA)	II	-	2
2. Food Service	II	-	199
3. You As Consumer And Producer	II	-	9
4. Heroes and Idols	I	-	173
5. Heroes and Legends	II	-	20
6. Knowing Myself	I	-	175
7. Newspaper Arts and Crafts	II	-	24
8. Newspaper Elective	II	-	26
9. Puppetry	II	-	88
10. Selling Yourself	II	-	28
11. Short Story Writing For Children	II	-	30
12. Sign Language	II	-	32
13. Signing	II	-	34
14. Search For America (Language Arts)	II	-	37
15. Growth and Development (Language Arts)	II	-	40
16. Man and the City (Language Arts)	II	-	44
17. Man and Nature (Language Arts)	II	-	48
18. Who Am I and What Can I Do About It	II	-	51
19. Writing For Fun and Profit	II	-	53

E. HEALTH AND PHYSICAL EDUCATION

1. Beginning Golf	II	-	56
2. First Aid	II	-	58
3. Personal Health	II	-	60
4. Recreation in America	II	-	252
5. Restaurant Operation	II	-	197

	Volume	-	Page
6. Techniques of Basketball Officiating	II	-	61
7. The Statistician in Sports	I	-	19
8. Sports: Hockey, Football and Soccer	II	-	63
9. Recreation: Basketball, Volleyball	II	-	65
10. Amusement-Entertainment: Gymnastic, Wrestling and Dance	II	-	67
11. Fitness: Track and Field	II	-	69
12. Tourism: Softball, Track and Field	II	-	71
13. Health Careers	II	-	73

F. FINE ARTS

MUSIC

1. They Sell Music	II	-	79
2. Musicians Who Teach	II	-	83

THEATER

1. Puppetry	II	-	88
-------------	----	---	----

ART

1. Photography	II	-	228
2. Self Awareness (LA)	II	-	91
3. Lettering (LA)	II	-	96
4. Printing (LA)	II	-	100
5. Color (LA)	II	-	104
6. Fabric Design (LA)	II	-	109
7. Fashion Design (LA)	II	-	114
8. Cartooning	II	-	119
9. Newspaper Arts and Crafts	II	-	24
10. Puppetry	II	-	88

G. PRACTICAL ARTS

1. Interior Design	II	-	123
2. The Automobile Mechanic	II	-	125
3. Communications and Media	II	-	129
4. Puppetry For Fun	II	-	145
5. Simple Puppets and Puppetry	II	-	149
6. Construction of A Mathematical, Scientific or Historical Device	II	-	153
7. House and Community Planning	II	-	157
8. Graphic Communication	II	-	161
9. Photography	II	-	228
10. Car Service (LA)	II	-	166

H. HOME ECONOMICS

1. Happy Homemaker (LA)	II	-	169
2. Christmas Crafts	II	-	193
3. Consumer Product Testing	II	-	194
4. Creative Stitchery	II	-	195
5. Mini-Opportunities: Self Help Work Program	II	-	250
6. Newspaper Arts and Crafts	II	-	24
7. Restaurant Operation	II	-	197
8. Food Service (LA)	II	-	199
9. Restaurant	II	-	205

I. LEISURE ACTIVITIES

1. Photography	II	-	228
2. Boating Safety and Seamanship--U.S. Coast Guard Auxiliary	II	-	246
3. Fly - Tying and Fishing	II	-	248
4. Mini-Opportunities: Self Help Work Program	II	-	250
5. Communications and Media	II	-	129
6. Christmas Crafts	II	-	193
7. Recreation In America	II	-	252

J. APPENDIX A: Unit Listing According to Clusters	I	-	195
---	---	---	-----

K. APPENDIX B: Unit Author and School	I	-	201
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FOREWORD

The career education resource units included in this guide have been developed and implemented by Newark School District teachers. These materials are intended to be utilized as resource materials. They can be adapted by teachers seeking ways to infuse career concepts into their existing curriculum, or they may be utilized as complete units.

Career education has rapidly become an educational priority at the national, state, and local levels. Hopefully these resource units will facilitate the integration of career concepts into the K-12 curriculum in a manner consistent with the educational needs of students.


Loren J. Thompson
Project Director

INTRODUCTION

A major thrust of the Career Education Program is to assist students in preparation for a meaningful and successful life of work. The scope of career education begins with educational experiences in early childhood and continues throughout an individual's lifetime.

Initial emphasis of a career education program provides for an awareness of the world of work and direct experiences to motivate the learner's interest. As a child moves through school he increases his familiarity with the world of work and investigates the many options available to him. He then acquires the knowledge and training necessary to obtain meaningful employment or enter a post secondary institution upon leaving school.

Rationale for Middle School Career Awareness:

The concept of career education is particularly applicable in the educational development of the middle school student. These years are crucial in the development of an individual. The student is changing physically, socially, sexually, mentally, and psychologically. The exploratory phase of career education serves to meet the needs and interests of all middle school students.

Career exploration assists the student in learning a process for decision-making toward the selection of cluster areas for indepth study. During this phase each student is helped to gain an understanding of himself: his interests, abilities, values, and needs. This understanding is then used to make career-related choices. The student explores a wide variety of occupations through meaningful, hands-on experiences in as many occupational clusters as possible. Opportunity for program change should be available with minimal "penalty". Opportunity for indepth exploration should also be available according to a student's need.

Therefore, all students in the middle school years, as a normal part of their educational process, should be seriously involved in activities that help them develop a greater proficiency in the knowledge and skills required in the world of work, to develop positive attitudes and proper work habits, and to gather information on which they can act as they consider possible educational and occupational alternatives.

Definition of Career Education:

Career education is a comprehensive education goal designed to provide all youth the opportunity for career awareness, and the opportunity to attain skills necessary to achieve economic independence and an appreciation of the dignity of work.

Goals for Middle School Career Exploration:

GOAL 1: TO PROVIDE EXPERIENCES FOR STUDENTS TO ASSIST THEM IN EVALUATING THEIR INTERESTS, ABILITIES, VALUES AND NEEDS AS THEY RELATE TO OCCUPATIONAL ROLES.

The student will be given the opportunity to:

1. engage in a variety of hands-on experiences--a "creative activity, a designing activity, or a construction activity"
2. experience success in his career activities
3. develop interpersonal skills through participation in a variety of grouping situations
4. make both positive and negative choices to help him discover his likes and dislikes
5. discuss his interests and abilities with a teacher or guidance counselor, based upon the results of interest inventories, aptitude tests, etc.
6. justify his career choices
7. recognize the social, economic, and personal importance of work
8. display a positive attitude toward work
9. practice the desirable habits that are needed in the world of work (e.g., promptness, attendance)
10. acquire possible life-long avocational choices or hobbies

GOAL 2: TO PROVIDE STUDENTS WITH OPPORTUNITIES FOR FURTHER AND MORE DETAILED EXPLORATION OF SELECTED OCCUPATIONAL CLUSTERS, LEADING TO THE TENTATIVE SELECTION OF A PARTICULAR CLUSTER FOR INDEPTH EXPLORATION.

The student will be given the opportunity to:

1. explore careers within the fifteen job clusters
2. select his own career choices and/or career courses
3. consider the consequences of his career choices
4. investigate career within the community
5. recognize national and world-wide careers

6. examine the characteristics and requirements of different careers (e.g., working conditions, educational and personal requirements, employment possibilities, socio-economic status and life style, etc.)
7. compare occupations in specific clusters with regard to their range, nature, and relatedness
8. compile information about a specific career or occupation
9. distinguish between the professional, technical, and non-technical levels of careers
10. recognize the necessity for adaptability in a constantly changing technological society

GOAL 3: TO IMPROVE THE PERFORMANCE OF STUDENTS IN BASIC SUBJECT AREAS BY MAKING THE SUBJECT MATTER MORE MEANINGFUL AND RELEVANT THROUGH UNIFYING AND FOCUSING IT AROUND A CAREER DEVELOPMENT THEME.

The student will be given the opportunity to:

1. demonstrate effective communication skills
2. demonstrate basic numerical skills
3. demonstrate manual-perceptual skills
4. engage in problem-solving and decision-making
5. develop effective work and study habits
6. develop consumer skills
7. describe the need for basic educational skills in the world of work
8. discuss the relevance of base subjects to future careers

MATHEMATICS

Unit Title: HOW BANKS SERVE YOU

I. Unit Overview: Since many students have or will have in the near future part-time jobs, there is a need for them to understand the many services offered by a commercial bank. In addition to learning the many services available to him, each student will become aware of the numerous occupations in the world of banking.

II. Unit Content Outline:

A. Banking

1. Procedures

- a. check-writing
- b. balancing a checkbook
- c. filling out an account signature card
- d. writing deposit and withdrawal slips
- e. checking the bank statements

2. Services

- a. checking account
- b. savings account
- c. personal loans
- d. special services (credit card, Christmas club, over-draft protection, and Bank-by-mail)

3. Careers

- a. bank officers
- b. bank clerk
- c. bank teller
- d. credit manager
- f. financial analyst
- g. investment counselor
- h. secretary

III. Unit Objectives:

1. The student will be able to discuss the main services of a bank as they relate to an individual or to a business.
2. The student will be able to identify banks that specialize in different types of services.
3. The student will be able to operate correctly all facets of a personal checking account.
4. The student will be able to observe the endorsements on a series of cancelled checks and the value of these as a receipt.
5. The student will be able to identify different occupations (careers in the world of finance).

IV. Unit Description:

Unit Objective #1: The student will be able to discuss the main services of a bank as they relate to an individual or to a business.

A. Criterion-Referenced Objectives: The student will:

1. be able to state the three main services of a commercial bank.
2. be able to name the two important differences between a checking account and a savings account.
3. be able to state the four types of loans made by banks.

B. Learning Activities: Each student will:

1. be given a set of teacher hand-outs that deal with the basic terms associated with the world of banking. After everyone has completed their hand-outs, there will be a class discussion on the hand-outs.
2. interview parents as to reasons they utilize banks.
 - a. Students will discuss parent interviews and decide what mathematical skills would be necessary for each. For example:
 - (1) Savings Account must know how to figure interest.
 - (2) Checking Account--must have accurate basic skills in addition and subtraction to keep checkbook balanced.
3. Each student will slip from newspapers, magazines, or pamphlets, advertisements that state the interest rate on savings accounts at local banks. Then each student will compare these savings accounts by computing the amounts of interest he would receive at the end of a year if he deposited \$100 in each savings account.

Unit Objective #2: The student will be able to identify banks that specialize in different types of services.

A. Criterion-Referenced Objective:

1. Given the names of six banks in the Newark area, the student will classify each bank as to its type.

For example:

 - a. Bank of Delaware-commercial bank.

B. Learning Activities:

1. Using the Money Management Booklet Library, each student will investigate the different types of banks and then explain how their services differ.
2. Each student will describe one or more banking services that might be used by each of the following:
 - a. a high school student who is planning to attend college.
 - b. a young couple who is buying a new car.
 - c. a man who wants to buy items on credit, and
 - d. a woman who owns jewelry, stocks and bonds.

Unit Objective #3: The student will be able to operate correctly all facets of a personal checking account.

A. Criterion-Referenced Objective:

1. The student will be able to complete a signature card for opening a new checking account.
2. The student will be able to correctly complete three or four checks when given the payee, payor, date, check number, reason for check, and amount of check.
3. Given the necessary information, the student will be able to prepare correctly two of three deposit slips.
4. Using the information they have learned, each student will operate a checking account for a period of a week.

B. Learning Activities:

1. Each student will be given a copy of a signature card. He must fill out the card as if actually opening a checking account.
2. Using the filmstrip "How to Use Your Checkbook", the student will not only learn the important parts of a personal check, but will learn the correct procedure to use when writing a personal check. After viewing the filmstrip, each student will answer questions pertaining to materials on the filmstrip.
3. The student will practice writing personal checks given payee, payor, date, check number, reason for check and the amount.
4. Each student in the class whose parents have checking accounts will bring a printed check form to class. The student will compare and then discuss the differences in the forms from the different banks.
5. Using on the overhead a copy of a bank statement, the students will conduct a class discussion on the importance of a bank statement. They will also examine and then list in their notebook the importance of each main item on the statement.
 - a. Some students will compare available bank statements from different banks for similarities and differences in their content.
 - b. Some students will bring to class examples of cancelled checks and a bank statements that will be examined by other members of the class.
6. The students will open and then operate a checking account using prepared blank checks, deposit and withdrawal slips and a bank statement. The student will write checks, complete check stubs, make deposits and withdrawals, endorse checks, and finally compute his own bank statement for a period of one week.
7. Students operating in small groups, will visit representatives of four local banks in Newark for the purpose of obtaining information on the many services offered by their bank to the public. The groups will then report this information to the class. The class

7. will then decide, by comparing the advantages and disadvantages of each service, what bank really offers the public the best services for the money.
8. Some students will elect to do one or both of the following as a special project.
 - a. Using the pamphlet, The Story of Checks, draw a diagram to illustrate the route of a check from the drawer to the payee.
 - b. Using the pamphlet, Keeping Our Money Healthy, write a report to explain how the Federal Reserve System operates.

Unit Objective #4: The student will be able to observe the endorsements on a series of cancelled checks and the value of these as a receipt.

A. Criterion-Referenced Objective:

1. The student will be able to write, on the back of checks, endorsements to illustrate the blank endorsement, full endorsement and restrictive endorsement. (The three checks used are checks that were written by other members of the class).
2. Using sample checks supplied by the Bank of Delaware, students will examine other types of endorsements.

Unit Objective #5: The student will be able to identify different occupations (careers in the world of finance).

A. Criterion-Referenced Objective:

1. The student will be able to state job descriptions for at least six (6) different occupations in the world of banking.

B. Learning Activities:

1. Students will discuss the role of persons whom they have observed as employees of a bank which they have visited.
2. Using their parents assistance, students will investigate other personnel connected with banking whose jobs do not include handling checks.
3. A bank representative will visit the classroom and explain to the students some of the responsibilities of the different people in the bank. Also, he will explain the codes to be found on checks and the routine of the checks if it should "bounce".
4. Using the outline on occupations, each student will research in detail an occupation in the world of banking.
5. Some students will enact (in play form) the different occupations in a bank, portraying a typical situation between client and employee.

SUGGESTED OUTLINE FOR SPEAKERS OR REPORTS

1. Nature of work
2. Educational qualifications:
 - a. High School
 - b. Post-high School
3. Cost of training
4. Personal qualifications
5. Working experience needed
6. Employment outlook
7. Working conditions:
 - a. Location (inside or outside)
 - b. Personnel with whom you work
8. Job Responsibilities
9. Daily routine
10. Are there quotas to be met? (Just where applicable)
11. Salary:
 - a. Starting
 - b. After five years
 - c. Possibilities for advancement
12. Chances of advancement
13. Company benefits
14. Job locations
15. Disadvantages
16. Attractive features
17. Why did you choose this career?
18. Where to go for more information (Give associations and addresses)

D. Evaluation: Students will be evaluated upon the completion of the following activities:

1. Students will successfully complete the Post Test at the conclusion of the unit.
2. Students will complete written assignments. Acceptability will be determined by teacher.
3. Student will endorse checks using blank, full and restrictive types of endorsements.
4. Students will complete learning activity #6, Unit Objective #3. The evaluation will be based upon neatness and legibility of materials as well as accurate completion of all mathematical skills.

An Analysis of Fifteen Occupational Clusters--U.S. Office of Education

Banking---English Language Service, Inc.

General Business for Everyday Living---Ray Price, Vernon Musselman & Edwin E. Weeks, Jr.

It's Your Money: A guide to Saving and Spending---Univac

Keeping Our Money Healthy---Federal Reserve Bank of New York

Money Management Booklet---Federal Reserve Bank of New York

Money Management Kit---Changing Times

Occupational Outlook Handbook

Reader's Guide to Periodical Literature

Story of Checks---Federal Reserve Bank of New York

FILMSTRIPS

How to Use Your Checkbook---Eye Gate House

MOVIE

Paying by Checks (A-512) Free Film Library

RECORDS

Bank Clerk/Teller---Baker and Taylor Co.

SPEAKERS

Representative from Bank of Delaware--Topic: Job Opportunities in the World of Banking

Study Tours

Tour of Local Bank: Tour of a Federal Reserve Bank

ADDRESSES OF MEDIA:

Baker and Taylor Co.
Audio Visuals Services Division
P.O. Box 230
Mokena, Ill. 60954

Changing Times Educational Services
Suite G 28
1729 H Street, N.W.
Washington, D.C. 20006

Eye Gate House
Jamaica, NY 10045

Free Film Library
State Department of Public Instruction
Dover, DE 19901

Household Finance Corporation
Prudential Plaza
Chicago, Ill. 60601

Univac-Division of Speery Rand
Advertising-Sales Promotion
P.O. Box 8100
Philadelphia, PA 19101

HOW BANKS SERVE YOU

Name _____

Date _____

Pre and Post Test

- I. Read the fifteen statements given below at the right; then, for each statement, select from the column at the left the term that best matches it in meaning. Write this term next to the appropriate number.

check
counterfeit
commercial bank
account
checking account
payee
drawer
postdating
bank statement
blank endorsement
cancelled checks
joint account
full endorsement
outstanding checks
service charge

1. An endorsement in which the payee signs only his name.
2. A fee collected by a bank for its checking account services.
3. A person who signs a check.
4. Stamped to indicate that payment has been made.
5. An order to a bank to pay a stated sum.
6. A bank's record of a customer's deposits.
7. The person to whom a check is made payable.
8. A checking used account used by more than one person.
9. Checks written but not yet presented for payment by the bank.
10. A record of a customer's deposits and withdrawals.
11. Writing a check for some future time.
12. A bank account that provides a convenient means of making money payments.
13. An endorsement that includes both the name of the endorser and the name of the person to whom the check is transferred.
14. Money made by anyone else other than the federal government.
15. The kind of bank that provides the widest variety of services.

II. Write the following checks, filling in the stubs first in each case. The balance in your checking account before writing the first check was \$78.60. (Blank checks are available at my desk).

- a. Check No. 21 to Brown's Hardware, for new wrenches, \$3.75.
- b. Show deposit of 1/2 of paycheck, paycheck is for the sum of \$187.44.
- c. Check No. 22 to Robert Bodie, for personal debt, \$34.76.
- d. Check No. 23 to Morgan's Bicycle Shop, for new bicycle, \$89.90.

III. From the following list of banking and related occupations, select any three occupations and then give a job description of each including duties, job responsibilities, personal qualification, employment outlook, and estimated beginning salary.

Bank Officers---Bank President, Bank Vice-President
 Bank Auditor
 Bank Clerk
 Bank Teller
 Bank Guard
 Bank Cashiers
 Bank File Clerks
 Clerical Workers
 Estate Planners
 Financial Analyst
 Financial Economist
 Investment Counselor
 Receptionist
 Typist

Name _____

Unit Title: EVERYDAY MATHEMATICS: MEASUREMENTS AND SPENDING MONEY

I. Unit Overview: This unit will help students to develop math skills, which will include measuring, earning money, ways to spend it, importance of time in daily life, the ways to tell time and computation.

II. Unit Content Outline:

- A. Making clocks.
- B. Measuring length and width.
- C. Plotting graphs of different measurement.
- D. Making payments by checks, cash or credit cards.
- E. Working and earning money.
- F. Applying for Social Security Cards.
- G. Applying for jobs.
- H. Understanding job training programs.

III. Unit Objectives: The student will:

- 1. be able to tell time and apply time in their day to day activities.
- 2. be able to name different kinds of clocks.
- 3. understand the importance of measuring in daily life and especially in certain professions.
- 4. be able to contrast and compare different measurements.
- 5. be able to suggest different instruments of measurements used in every day life.
- 6. be able to measure in inches, feet and yards.
- 7. understand that there are many ways to pay bills.
- 8. be able to make payments in cash, by check or by credit cards.
- 9. explore the earning possibilities or careers open to them.

IV. Unit Description:

Unit Objective #1: The students will be able to tell time, apply time in their day to day activities.

A. Criterion-Referenced Objective: The students will:

- 1. be able to improve their skill by looking at different clocks.
- 2. be able to recognize different kinds of clocks and how they are used.

B. Learning Activities: The student will:

- 1. read and write the names of all kinds of clocks.
- 2. draw circles using a compass.
- 3. draw clocks.
- 4. write their time table of daily activities.
- 5. hold discussions about the importance of time in daily life.
- 6. write their diaries showing time of each and every activity.

EVERYDAY MATHEMATICS: MEASUREMENT AND SPENDING MONEY

7. plot a time graph of their daily activities in the school.
8. plot a time graph of their activities at home.
9. solve many math related problems related to time.
10. learn relationship of time and speed.
11. have a real 'feel' of time by closing their eyes and putting cloth on clock to guess "how time runs fast!"
12. discuss concept of time in 1 minute, 5 minutes, and half an hour clock.
13. use of timer or electric timer.
14. make parts of clock, like short hand and long hand and manipulate.
15. use stop watch.
16. using a maze and stop watch will time himself.
17. learn Roman Numerals.
18. do math problems related to Roman Numerals.
19. measure time on blank clock without numbers on it, while big hand travels.
20. write Roman Numerals.
21. observe different clocks with and without second hand.
22. solve math problems related to seconds and minutes and hour.
23. learn about A.M. & P.M. Discuss A.M. & P.M. activities
24. learn about morning, afternoon, noon, evening, night, and midnight.
25. solve math problems, like how many hours are there between 8:00 a.m. to 10:00 p.m.

Unit Objective #2: The students will be able to name different kinds of clocks.

A. Criterion-Referenced Objectives:

1. The students will devise a method of making clocks with cardboard paper and other day to day materials.
2. Given a water clock, the students will be able to describe its origin and how it is used.
3. Given all the articles needed, the students will be able to make a sand clock.

B. Learning Activities: The students will:

1. make clocks.
2. collect old clocks.
3. visit museum.
4. study history of Egypt and China.

Unit Objective #3: The students will understand the importance of measuring in daily life and especially in certain professions.

A. Criterion-Referenced Objectives:

1. The students will be able to give two different examples of their own uses of measurements.
2. Give the dimensions and the materials, the student will be able to make checker boards.

B. Learning Activities:

1. Given the measurements the student will be able to make a box of cardboard.
2. Given different boxes, the student will be able to reduce its size by cutting it and measuring it as per specifications provided.
3. Make a list of tools used for measuring.
4. Manipulate all the tools available for measurement.
5. The students will draw stars, triangles, rectangles of different sizes given by the teacher.
6. Discuss importance of proper sizes for clothing, doors, windows, etc.
7. The students will discuss the importance of sophisticated measurements in present day industrialized society.
8. The students will use measurements to construct a maze.
9. The students will visit a carpentry shop, blacksmith shop, motor mechanic shops.

Unit Objective #4: The students will be able to contrast and compare different measurements.

A. Criterion-Referenced Objective:

1. The students will be able to plot a graph of the measurements of themselves and the articles they are wearing.
2. Given a project to measure, the student will be able to devise a method of measuring it.

B. Learning Activities:

1. Make a Family Tree of measurements.
2. Plot a graph of length of arms of all students in the classroom.
3. Make their own rulers of different sizes 1 foot, half foot and 1 yard.
4. The students will measure their fingers, nails, and compare it with others.
5. The students will use compass to direct different length and widths and then compare it with ruler and check its accuracy.
6. The students will write to different airlines to send them dimensions of different aeroplanes.

Unit Objective #5: The students will be able to suggest different instruments of measurement used in everyday life.

A. Criterion-Referenced Objective:

1. The student will be able to measure the length and width of the classroom by using their body parts.

B. Learning Activities:

1. Measure length and width of articles with his hand.
2. Measure length and width of articles with his foot.
3. Measure length and width of articles with his arm.
4. Measure length and width of articles with a ruler.
5. Compare and contrast the discrepancies of these measurements.
6. Learn to measure accurately and know the importance of exact measurement.
7. Make a list of their own measurements.
8. Make a list of articles which can be measured in the classroom.
9. Make a profile of their own measurements.

Unit Objective #6: The student will be able to measure in inches, feet, and yards.

A. Criterion-Referenced Objective: The student will...

1. be able to correctly measure different objects in the classroom.
2. be able to measure the length and breadth of their classrooms with 100 percent accuracy.

B. Learning Activities:

1. The students will be able to measure their own sizes of body, clothes and shoes.
2. The students will be able to make a profile of their own measurements.
3. Given examples, the students will be able to estimate the different measurement of various things.
4. Given many devices, the student will measure the door of the classroom with 90 percent accuracy.
5. Measure length and width of classroom.
6. Measure length and width of carpet in the classroom.
7. Measure length and width of walls in the classroom.
8. Measure length and width of Teacher's desk and chairs in the classroom.
9. Measure length and width of their books.
10. Measure length and width of doors and windows in the classroom.

11. Measure length and width of their pencils and pens.
12. Measure the length and width of chalkboard in the classroom.
13. Measure the length of a new chalk and a used one.
14. Learn formulas for converting measurements. Example:
12 inches = 1 foot, 3 feet = 1 yard.
15. Solve math problems related to measurements, like addition, subtraction of measurements, area, diameter, etc.
16. Indoor and outdoor measurement of articles.
17. The students will measure different cars and car seats.
18. The students will use sticks, ropes, arms, feet, and hands for measurement.
19. The students will discuss the history of development of various tools used these days for measurement.
20. The student will measure height of articles in the classroom.
21. The student will learn to measure exactly to the accuracy of $1/10$ of an inch.
22. The student will convert yards into feet and feet into inches.
23. The student will draw lines with pencil and measure it and record measurements.
24. The student will learn to write measurements in different ways using words or using numbers like words:
one half = $1/2$.
25. The student will measure their movements in the classroom and write how much distance did they travel during the day.
26. The students will visit roads under repair or being widened.
27. The student will measure different sport cars and discuss their dimensions. The relationship of dimensions related to speed.

C. Evaluation:

1. Paper and pencil test
2. Standardized math test.
3. Actual Measurement Project to determine their skill and accuracy.

EVERYDAY MATHEMATICS: MEASUREMENT AND SPENDING MONEY

Unit Objective #7: The students will understand and investigate the methods used to pay bills.

A. Criterion-Referenced Objective:

1. The students will be able to recite 3 ways to pay bills.
2. Given a check and a bill, the students will be able to write checks.
3. Given a credit card, the students will be able to pay a bill using a credit card.
4. Given certain amount of money and cost of articles purchased, the students will be able to pay using exact change.

B. Learning Activities: The student will:

1. fill out application for credit card.
2. examine different credit cards.
3. make credit cards.
4. discuss credit cards, their advantages and disadvantages.
5. examine checks, learn to write checks, write letters to banks to send them blank checks, visit banks, make their own checks and write many checks.
6. convert classroom into a Mini-bank and students will work as tellers, cashiers, and computer operators.
7. convert classroom into small grocery store, post office, and Woolco Store and do actual buying and making payment using 3 methods of payment.
8. write their preference of making payments.
9. make a profile of how their parents make payments of their bills.
10. interview teachers as to how they pay bills.

Unit Objective #8: The student will be able to make payments in cash, by check, or by credit cards.

A. Criterion-Referenced Objective:

1. Given a list of articles to buy and the option to pay either by cash, check or credit card, the students will be able to pay in all these 3 methods.

B. Learning Activities: The student will:

1. manipulate cash in the classroom.
2. count money, and learn how many pennies in a dollar.
3. convert pennies into dimes, nickles, quarters, and dollars.
4. do math problems relating to money by actually handling it and counting it on the other hand.
5. devise a game in which the student will use the 3 forms of payment either by throwing a dice or using a spinner.
6. convert classroom corners into many stores, like Woolco in one corner, post office in other corner, grocery store in another corner, and students working as sales clerks, and other students going there as customers and making payments.

EVERYDAY MATHEMATICS: MEASUREMENT AND SPENDING MONEY

7. Students will pay actual cash for candies and ice cream, which the classroom teacher will buy in advance and keep in store.

Unit Objective #9: The students will explore the earning possibilities of careers open to them.

A. Criterion-Referenced Objective:

1. Given the choice of careers open to them, the students will be able to organize their personal data matching the job requirement.
2. The students will be able to identify the various requirements of the job open to them.
3. The students will be able to recognize and specify their limitation in relation to a particular job.

B. Learning Activities:

1. The teacher will present information relating to various jobs open to them by showing films or transparencies.
2. Visit to employment agencies.
3. Read newspapers for job openings and make a list of jobs interesting to them.
4. Visit to school cafeteria.
5. Discussion of various job opportunities in the kitchen.
6. Work in school cafeteria.
7. Listen to janitor about his work in school.
8. Work with janitor.
9. Write personal data.
10. Write and discuss various job requirements.
11. Visit Chrysler Motor plant, Paper Mill, car garage, Police station, butcher shop, A & P and Acme Stores.
12. Name 3 jobs of their likings and match it with their personal data.
13. Discuss the income of those jobs.
14. Work on income related math problems, like how much income they will derive by working 8 hours a day, 5 days a week, at \$2.00 per hour.
15. What is a minimum wage and who determines that?
16. Math problems dealing with earning and spending.
17. Math problems teaching multiplication and division.
18. How to spend wisely.
19. Why to budget and its importance.
20. Write a paragraph about the job which they would like to do.
21. Fill in job application forms.
22. Visit Artesan Water Co., Farmers Market, farm, bank, and dry cleaners.
23. Write invitations to community agencies to talk to students as to how these agencies can help them to get a job.
24. Students will discuss about their preparation and motivation about a particular job.

EVERYDAY MATHEMATICS: MEASUREMENT AND SPENDING MONEY

25. Setting out interviews in the classroom.
26. Discussion about the interview, what is expected of them and how to go prepared for the interview.
27. Make up interviews in the classroom.
28. Students will prepare their income and expenditure statements.
29. Fill in application for Social Security Card.
30. Discussion about Income Tax Federal and State.
31. Discussion about the importance of spending money wisely.
32. Students will prepare various budget plan.

C. Evaluation:

Paper and pencil tests.

Teacher's assesment of their progress.

Unit Title: THE STATISTICIAN IN SPORTS

I. Unit Overview: This is a course designed primarily for the student who someday might have an interest in a career related to sport facts. Some of the things we will do are: Compute batting averages, slugging averages, fielding averages, earn-run averages, winning percentage, game behind, and the like. The course will be very much activity oriented. Activities will include everything from dice baseball, T.V., weight-lifting, wiffleball, doing research in and out of school on statistician's in sports and possibly making a written report. If you like sport facts and like working in pairs, this course is a must. You'll enjoy it!

II. Unit Objectives:

1. Given the won-lost record of two leagues of teams, each student should be able to determine the winning percentage of each of the teams.
2. Given the won-lost record of two leagues of teams, each student should be able to determine how many games one team is behind or ahead of another.
3. Given the number of hits made by a baseball player and his times at bat, each student should be able to determine his batting average.
4. Given the number of runs scored against a baseball pitcher and the number of innings he pitches, each student should be able to determine his earn-run average.
5. Given the number of errors made by a baseball player and the number of chances he had to make an error, each student should be able to determine the fielding percentage.
6. Given the seasonal and lifetime statistics of certain ball players, each student should be able to determine a player's slugging average.
7. Given some general sports statistics, each student should be able to do problems related to percent.
8. Given the necessary leadership and direction, each student will be able to research a possible career related to the statistician in sports.

III. Unit Objective #1: Given the won-lost record of two leagues of teams, each student should be able to determine the winning percentage of each of the teams.

A. Criterion-Referenced Objective:

1. Given the won-lost record of two leagues of teams, each student should be able to set up the league standings in the correct order.
2. Given the won-lost record of two leagues of teams, each student should be able to list those teams playing better than .500 ball and those playing worse than .500 ball.

B. Learning Activities:

1. Use the game results from the dice baseball game and determine the winning percentage of each team.
2. Complete a ditto sheet by findings the missing percentages of set of teams.
3. From memory alone, list all baseball teams in the various leagues. Circle the teams that you think are playing .500 or better ball.

C. Materials:

Paper, pencil, dice game results, practice ditto sheet.

Unit Objective #2: Given the won-lost record of two leagues of teams, each student should be able to determine how many games one team is ahead or behind the other.

A. Criterion-Referenced Objective:

1. Given the league standings in the correct order, each student should be able to list the games behind for all the teams.
2. Given two teams, the student will be able to set up a hypothetical situation in which the teams are in the correct order percentage wise but in the incorrect order in games behind.

B. Learning Activities:

1. Given the won-lost record of a set of teams, by guessing alone, see if students can place teams in their correct place.
2. Given the won-lost record of a set of teams, first place the teams in their proper order by using percentages, then determining games behind.
3. Given the won-lost record of a set of teams, by just using the idea of games behind, place all teams in proper order.
4. Use the game results from the dice baseball game and set the teams in the correct order by finding the games behind.
5. Complete a ditto sheet by finding the missing games behind of a set of teams.

C. Materials:

Paper, pencil, dice baseball game results, practice ditto sheet.

Unit Objective #3: Given the number of hits made by a baseball player and his times at bat, each student should be able to determine his batting average.

A. Criterion-Referenced Objective:

1. Given a list of batters placed in order according to batting averages, each student should be able to determine all batting averages.
2. Given the top ten batters in each league in rearranged order, each student should be able to determine the correct batting averages and place players in the correct order.
3. Given the top two batters in the league (and their batting averages), each student should be able to determine the number of hits needed for the second place batter to move into first place.
4. Given a team's hits and at bats, determine the team's batting average.

B. Learning Activities:

1. Given a set of box scores from a current paper, students are to find mistakes in batting averages.
2. Use the same results from the dice baseball game and determine the batting averages of the players.
3. Ditto sheet practice with batting averages.
4. Wiffle ball game - take results from game and find batting average.

C. Materials:

Paper, pencil, newspaper, box scores from past years, dice baseball game results.

Unit Objective #4: Given the number of runs scored against a baseball pitcher and the number of innings he pitches, each student should be able to determine his earn-run average.

A. Criterion-Referenced Objective:

1. Taking a box score from a baseball game, each student should be able to determine the earn-run average of all pitchers involved in the game.
2. Given the top five pitchers in each league (according to percentage), order these pitchers by determining their earn-run averages.
3. Given two regular pitchers from each league and their earn-run averages, each student should be able to determine the number of scoreless innings needed for the second place pitcher to move ahead of the other pitcher.

B. Learning Activities:

1. Using box scores, students will find earn-run averages.
2. Using the composite box scores (Sat. Paper), students will check results in paper by working out earn-run averages.
3. Use the game results from the dice baseball game and find earn-run averages of the two pitchers.
4. Wiffle ball game results.

C. Materials:

Paper, pencil, newspaper, box scores from past years, dice baseball game results.

Unit Objective #5: Given the number of errors made by a baseball player and the number of chances he had to make an error, each student should be able to determine the fielding percentage.

A. Criterion-Referenced Objective:

1. Given a list of ten players with their chances and errors, each student should be able to correctly determine the fielding percentage of 8 out of 10.
2. Given a list of 10 players with their fielding percentages and errors known, each student should be able to find the number of chances the player had.

B. Learning Activities:

1. Dittoed worksheet with a list of players with their chances and errors.
2. Use of library to find information concerning fielding averages. (Each student is expected to get two of the three necessary pieces of information.)
3. Wiffle ball game results.
4. Watch a game on T.V. and take down necessary statistics.

C. Materials:

Paper, pencil, ditto worksheet, magazines and other resource materials.

Unit Objective #6: Given the seasonal and lifetime statistics of certain ball players, each student should be able to determine a player's slugging average.

A. Criterion-Referenced Objective:

1. Given the at bats and total bases, each student should be able to determine a player's slugging average (seasonal and lifetime).
2. Given the at bats, singles, doubles, triples, and home runs, each student should be able to find the total bases and slugging average.
3. Given the at bats, hits, doubles, triples, and home runs, each student should be able to find the total bases and slugging average.

B. Learning Activities:

1. Use the game results from the dice baseball game and determine the total bases and then slugging average.

Unit Objective #7: Given some general sports statistics, each student should be able to do some problems related to percent.

THE STATISTICIAN IN SPORTS

- A. Criterion-Referenced Objectives:
1. Given a football card, each student should be able to correct it and figure out the percent of correct picks he has made.
 2. Given a composite of classroom's results on football cards, each student should be able to determine the percent of correct picks the class has made.
 3. Given a set of weightlifting results, each student should be able to determine his own strength per body weight and compare with results of class.
- B. Learning Activities:
1. Use of professionally made football cards to make our weekly picks.
 2. Make up our own football cards and possibly use newspaper picks.
 3. Weightlifting for students to set results to make comparisons as to strength per body weight.
 4. Ditto sheets of results of former students (weightlifting).
- C. Materials:
- Paper, pencil, ditto sheets, weights, football cards, newspapers.

Unit Objective #8: Given the necessary leadership and direction, each student will be able to research a possible career related to the statistician in sports.

- A. Criterion-Referenced Objective:
1. Given the format for writing a letter, each student will be able to write to a place to obtain information concerning a statistical career in sports.
 2. Given various newspapers, each student will be able to find information in the classified ads and write a general summary of qualifications, course, pay, etc. of statistical jobs.
 3. Given the opportunity to go to the library, each student will be able to research statistical workers and write a short report of characteristics of the jobs available to statisticians.
- B. Learning Activities:
1. Write letters to various papers, magazines, professional teams, etc. to receive data concerning job characteristics of their statisticians in sports.
 2. Write to the OIC and other related professional job agencies to obtain information for statistical jobs.
 3. Collect all magazines and newspapers possible.

THE STATISTICIAN IN SPORTS

4. Extensive use of library.
 5. Possibly go to a game and play amateur statistician.
- C. Materials:
Paper, pencil, newspapers, magazines, envelopes, stamps.
- D. Evaluation:

Post Test Format

1. Given the won-lost record of a list of teams, circle the teams that are playing better than .500 ball.
2. Given the won-lost record of a team, determine the team's winning percentage.
3. Given the won-lost record of six teams placed in order, fill in the games behind.
4. Given the hits and at bats of a baseball player, find his batting average.
5. Given the number of runs scored against a baseball pitcher and the number of innings he pitches, find his earn-run average.
6. Given the number of errors made by a baseball player and the number of chances he had to make an error, find the fielding percentage.
7. Given the seasonal statistics of a ballplayer, find the slugging average.
8. Given a person's weightlifting results and coefficient associated with his body weight, find his strength per body weight.
9. Given the correct and incorrect choices on a football card, find the percent of correct choices.
10. An essay type question related to the necessary job qualifications and characteristics of statisticians.

Unit Title: SEARCH FOR AMERICA

I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Search For America" gives an overview of America today. Emphasis is placed on the historical development of American society, the physical make-up of the United States, and the occupations and way of life of the people.

II. Unit Content Outline:

- A. Measurement
 - 1. Linear -- Ancient Units
 - 2. Linear -- English System
 - 3. Linear -- Metric System
 - 4. Conversion -- English -- Metric
- B. Graphing Data
 - 1. Line
 - 2. Bar
 - 3. Circle
 - 4. Co-ordinate
- C. Maps
 - 1. Map of U.S.A.
 - a. Population
 - b. Distance
 - c. Location
 - 2. Interstate Road Maps
 - 3. City Maps
 - 4. Student Constructed Maps of Small Defined Areas

III. Unit Objectives:

- 1. After a class demonstration and student manipulation of measurement instruments, students will demonstrate proficiency with these.
- 2. After completion of this unit, the student will be able to measure the length of various objects and compute the distance between two points on a map.
- 3. Upon completion of this unit, students will be able to examine various objects, measure their length, width, and height, and finally construct a scale drawing.
- 4. Upon completion of this unit, the student will be able to map a defined area.
- 5. Upon completion of this unit, students will be able to interpret and apply road maps and tourist guides.

IV. Unit Description:

- A. Criterion-Referenced Objective:
 - 1. The student will be able to manipulate each of the following devices: ruler-yardstick and meter stick, by correctly measuring 5 lines of various lengths.

2. Given an object, the student will be able to estimate its length within an inch (5 cm); then, he will be able to measure it accurately to the nearest $1/8$ ".
3. Given a road map, student will be able to determine the distance between any 2 given cities by measuring and using scale provided.
4. Student will be able to sketch two of the following objects: teacher's desk, file cabinet, blackboard.
5. Student will be able to label the length, width, and height of an object on the sketch drawing.
6. Student will be able to make conversion scale and apply it to a sketch drawing to construct a scale drawing accurate to $1/8$ ".
7. Given a conversion table and a list of measurements, the student will be able to convert each measurement to a smaller or larger measurement within the same measurement system (i.e., the English or Metric) (as stated in test item).
8. Given road maps and tourist guides, the student will be able to plan a vacation. In so doing, he must identify point of origin and destination, all highway numbers in consecutive order, all major towns (towns, state), and landmarks or points of interest encountered along the way.
9. The student will be able to draw a map and label streets and buildings of two of the following three areas:
 - a. school and surrounding neighborhood
 - b. home and surrounding area
 - c. city of Newark

B. Learning Activities:

1. Students will use research materials to define the various ancient units of measurement. Each student will then measure their own pace, span, cubit, palm, and fathom in both the English and Metric System. Following this, the students will measure several objects and perform experiments using ancient, English and Metric units.
2. For each of the following primitive methods of measurement, identify the advantages and disadvantages of using each method today.

a. sun-dial	c. hour-glass
b. water clock	d. burning candle
3. Students will complete a set of learning stations. Some of these are listed below:
 - a. Proportional enlargement drawings
 - b. Scale drawings
 - c. Interpreting directions (N, S, E, W) from a given map by answering a series of questions

- d. Planning a vacation -- Students will plan a vacation in which they must include place of origin, destination, highway numbers listed in consecutive order, all major cities (city, state) and landmarks or points of interest. Several road maps, city maps, and tourist guides will be available for the student's use.
- e. Scale measurement
Given a large map of Pennsylvania, Delaware, Maryland, Virginia, and West Virginia, rulers and string, students will place string along main roads between two given cities. After measuring the length of the string, and converting this length to mileage by using a conversion table, student will determine the distance between the respective cities and record this information. A second part of this activity involves using the table provided on the map which gives the distance between various cities. Students will compare their "string distance" with the "table distance" to determine their accuracy.
- f. Treasure Island map
Students will be provided with a treasure map and instructions which when followed step by step will lead to the "treasure".
- g. Map of neighbors in class (a coordinate graph)
- h. Students will make line, bar, and circle graphs from a tally of students having visited each state of the United States, of the number of times visited, and of the mode of transportation.
- 4. By using straight and curve lines for roads, squares and circles for buildings, students will sketch maps of two of the following places: school and surrounding area, neighborhood (home), and the city of Newark.
- 5. Using the book, Mapping Small Places, the student will work through several activities. The following is an example taken from page 4.

"What do maps try to show?"

Students will examine a photograph of an area which they will answer the following questions:

"Can you see houses, trees, and streets?"

"Try to pick out the river, the two bridges over the river, the railway track, the canal, and the dam."

"In which direction does the river flow?"

"Can you find farms?"

"What other objects can you identify?"

"What is a landmark?"

"On a piece of paper, draw the shape or outline of five or six objects just as they appear in the photograph."

Each shape that you have drawn can be called a symbol."

- 6. Speaker -- Newark Chamber of Commerce -- Topic: "Aerial Photography"
- 7. Speaker -- Bank of Delaware -- Travel Agency

C. Materials

1. Arithmetic Teacher, The
2. "Facts for Study"
- *3. Mapping Small Places
4. Metric Supplement to Science and Mathematics
5. Set of Twenty Self-Written Learning Stations:
 - a. ancient measurements
 - b. English - Metric Conversions
 - c. mapping
 - d. scale drawing
6. "Think Metric"
7. Macmillan activity cards
8. dictionaries
9. interstate road maps
10. city maps
11. Activities In Mathematics (second course) ---

NCTM
Automobile Manufacturers Association
Holt, Rinehart and Winston
Fred J. Helgren

NEA

gas stations
Delaware Trust Company
Newark Chamber of Commerce
Scott Forseman and Company

*highly recommended material

D. Evaluation: Students will be evaluated upon the completion of the following activities:

1. Students will complete the measurement and mapping learning stations previously described.
2. Students will be evaluated on the neatness and completeness of two of the three maps listed under unit one, activity #3.
3. Students will complete the experimentation and reporting of lab activities from the book Mapping Small Places.

SEARCH FOR AMERICA

Name _____

Date _____

Glance through the page before you begin. Complete the easier exercises first. If you have the time, try to finish the more difficult exercises as well.

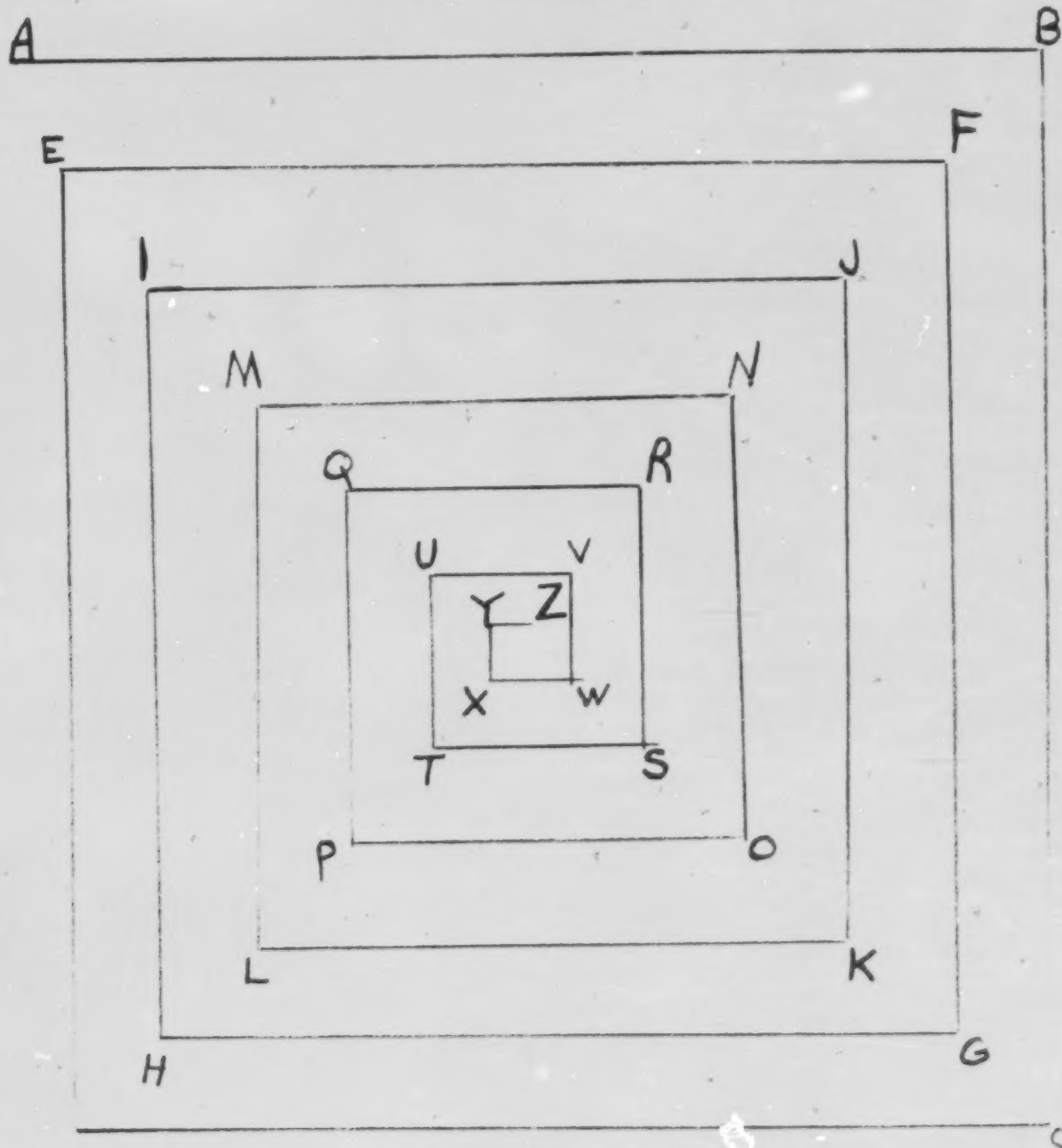
1. $\begin{array}{r} 3714 \\ +4986 \\ \hline \end{array}$	2. $\begin{array}{r} 6056 \\ -1095 \\ \hline \end{array}$	3. $3 \overline{)3745}$	4. $\begin{array}{r} 12,807 \\ \times \quad 8 \\ \hline \end{array}$
5. $\begin{array}{r} \$14.54 \\ 7.80 \\ 43.67 \\ 18.83 \\ \hline .68 \end{array}$	6. $35 \overline{)4830}$	7. $\begin{array}{r} 357 \\ \times 824 \\ \hline \end{array}$	8. $\begin{array}{r} 10,046 \\ - 678 \\ \hline \end{array}$
			9. $\begin{array}{r} 158.45 \\ \times \quad 7 \\ \hline \end{array}$
10. $\frac{1}{2} \times \frac{1}{2} =$	11. $\frac{2}{3} \times \frac{3}{5} =$	12. $1\frac{3}{4} \times 3 =$	13. $\frac{7}{8} + 2 =$
14. $1\frac{2}{3} \times 2\frac{3}{4} =$	15. $\frac{5}{6} \div \frac{2}{3} =$	16. $1\frac{5}{6} \div 3\frac{7}{8} =$	17. $4\frac{2}{3} \div 2\frac{1}{5} =$
18. $.5 + .3 =$	19. $.8 + .3 =$	20. $1.25 + 2.5 =$	21. $3.1 + .13 =$
22. $1.7 - .8 =$	23. $3 - 1.3 =$	24. $2.1 - .007 =$	25. $.075 - .05 =$
26. $.3 \times .4 =$	27. $1.5 \times 8 =$	28. $2.17 \times .03 =$	29. $.08 \times .09 =$
30. $2.7 \div 3 =$	31. $42 \div .6 =$	32. $1.44 \div 1.2 =$	33. $.7 \div .007 =$
34. $10\% \times 80 =$	35. $25\% \text{ of } 7 =$	36. $17\% \times 10 =$	37. $135\% \times 3 =$
38. $15 \overline{)675}$	39. $.42 \overline{)562.8}$	40. $\begin{array}{r} 3.24 \\ \times 2.9 \\ \hline \end{array}$	41. $3^2 + 2^3 =$
			42. $\sqrt{25} + \sqrt{64} =$

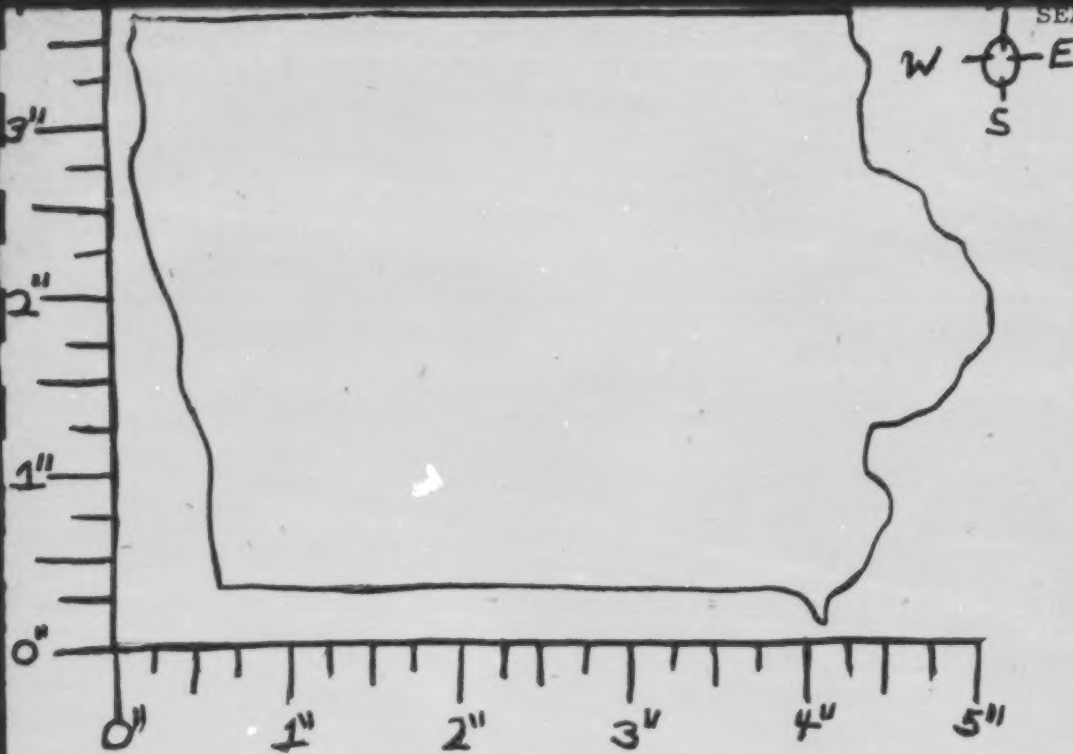
MEASURE AND ADD

Find the distance on the path from A to Z in inches.

Find the distance on the path from A to Z in centimeters.

Suggestion: Write the measure of each segment on the segment after you measure it.





DIRECTIONS:

Measure the distances given and put a dot on this map to represent the approximate location of a town. (Label the dot a, b, c, etc., to correspond with the letters below.)

Then, using an Iowa road map, identify the town and put its name in the blank provided.

	EAST	NORTH	TOWN LOCATED
a.	3 3/4 inches	2 3/4 inches	
b.	1 1/2 inches	1 inch	
c.	1 1/2 inches	3 inches	
d.	3/4 inches	1 1/4 inches	
e.	2 1/4 inches	2 1/2 inches	
f.	1/2 inch	2 3/4 inches	
g.	5 inches	2 3/4 inches	
h.	3 1/4 inches	3 1/2 inches	
i.	4 1/4 inches	1/4 inch	
j.	2 1/2 inches	1 1/2 inches	
k.	3 inches	3/4 inches	
l.	4 3/4 inches	1 1/2 inches	
m.	2 1/2 inches	3 1/2 inches	
n.	3 inches	1 3/4 inches	
o.	4 1/2 inches	1 1/4 inches	
p.	1 inch	3/4 inches	



Unit Title: GROWTH AND DEVELOPMENT

I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Growth and Development" focuses on the individual and his relationships, both mechanical and humanistic. The concept of growth is explored from various perspectives including personal, scientific, mechanical and societal. The student is urged to recognize the development of the decision making process as an integral part of personal and societal growth.

II. Unit Content Outline:

- A. Mathematicians
 - 1. Lives
 - 2. Contributions
 - 3. Role-Plays
- B. Numeration Systems
 - 1. Decimal Numeration System
 - a. Base Two
 - b. Base Five
 - c. Base Ten
 - 2. Historic Numeration System
 - a. Babylonian
 - b. Egyptian
 - c. Chinese
 - d. Roman
 - e. Hindu-Arabic
- C. Mathematical Machines
 - 1. Abacus
 - 2. Napier's bones
 - 3. Pascal's Adding Machine
 - 4. Charles Babbage's Difference Engine
 - 5. Dr. Vannevar Bush's Differential Analyzer
 - 6. Herman Hollerith's data processing machine
 - 7. "Computer"

III. Unit Objectives:

- 1. By utilizing the resources available in the Instructional Media Center, the student will be able to gather information relating to the lives and theories of various mathematicians (scientists).
- 2. Student will investigate the world of math machines by doing research in the Instructional Media Center, operating both simple and complex counting devices, and devise a method for the construction of a particular machine.
- 3. The student will investigate the lives of several mathematicians by reading plays.

A. Criterion-Referenced Objectives:

1. After completing several class sessions of research in the Instructional Media Center, the student will be able to list at least 35 mathematicians.
2. After completing several class sessions of research in the Instructional Media Center, the student will be able to successfully complete eight out of ten matching questions relating each mathematician to his theory or major contribution.
3. After completing research in the Instructional Media Center, the student will be able to describe the abacus, Napier's bones, Pascal's adding machine, Charles Babbage's Difference Engine, Dr. Vannevar Bush's Differential Analyzer, Herman Hollerith's data processing machine, and the computer by writing a paragraph about each comparing and contrasting it to the others.
4. After several class sessions of operating an abacus, Napier's bones, an adding machine, and a calculator, the student will be able to take a given problem, devise a method for the solution of it, and choose the machine which would facilitate the solving of it most efficiently.
5. The student will be able to devise a method and construct one simple math machine such as an abacus, Napier's bones, an adding machine a simple computer, an addition-subtraction rule, or a multiplication-division slide rule.
6. The student will be able to role-play the life of a particular mathematician.

B. Learning Activities:

1. Students will spend three days per week for the first three to five weeks gathering information about the lives and contributions of forty-five mathematicians, about the development and usage of different numeration systems, and about the history of mathematical machines.
2. Some students may choose to construct a simple mathematical machine. This would be a two-part activity: first the student will plan his method of construction and make sketches of his ideas in his mathematics class; second, the student will use the available tools and materials in the wood and metal shops to build the specific mathematical instrument.
3. Filmstrip-Film-Poster Presentation -- Students will view several films, filmstrips, and posters about the history of the decimal numeration system, including historic counting methods and devices of the Babylonians and Egyptians through the present IBM, UNIVAC, and Burrough's systems. Included in this activity is a poster demonstration entitled, "Origin of Numbers."
4. Students will learn how to manipulate the various mathematical machines ranging from a Japanese and a

- Chinese abacus to a calculator. Teachers as well as students will demonstrate the devices; then all students will practice in order that they might increase their speed and accuracy in solving a simple problem.
5. Students will read plays about the lives of mathematicians. After reading these plays students will research the customs reflecting the times of these famous people in order that they might act out these personalities for other class members.
 6. Field Trip - University of Delaware Computer Center.
 7. After having researched various careers in the fields of data, processing and computers and having viewed films provided by such agencies as UNIVAC, Post Office Dept., Bell Telephone of Penn., and the Delaware Dept. of Instruction, students will discuss career opportunities and related information in a very informal class session.

C. Materials:

- | | |
|---|---|
| 1. <u>Abacus - A Pocket Computer, The</u> | Jesse Dilson |
| 2. <u>Arithmetic Teacher, The</u> | NCTM |
| 3. <u>Careers for the 70's - Securities</u> | Crowell-Collier Press |
| 4. <u>Computers!</u> | Merit Badge Series,
Alan Vorwals
Bernice Knoh |
| 5. <u>Computers at Your Service</u> | |
| 6. <u>Computers: There History and How
They work</u> | Richard B. Rusch |
| *7. <u>Encyclopedia of Careers and Vocational Guidance</u>
Revised Edition | Doubleday and Co., I |
| Volume I - Planning Your Career | |
| Volume II - Careers and Occupations | |
| 8. <u>Forum</u> | J.C. Penny |
| 9. <u>Giant Golden Book of Mathematics, The</u> | Irving Adler
J.M. Pullan |
| 10. <u>History of the Abacus, The</u> | Constance Reid |
| 11. <u>Long Way from Euclid, A</u> | Life Science Library |
| 12. <u>Mathematics</u> | Morris Kline |
| 13. <u>Mathematics: A Cultural Approach</u> | Scientific American |
| 14. <u>Mathematics in the Modern World</u> | Franklin Series |
| *15. <u>Mathematics: Man's Key to Progress</u> | Irving Adler |
| 16. <u>Readings in Mathematics - Book Two</u> | Hy Ruchles |
| 17. <u>Story of Mathematics, The</u> | |
| 18. <u>Story of Mathematics for Young People</u> | James T. Rogers |
| 19. <u>Wonderful World of Mathematics, The</u> | Lancelot Hogben |
| 20. <u>Yes, No...One, Zero</u> | American Petroleum
tute |
| 21. <u>Episodes from the lives of Famous Mathematicians</u> | Plays |
| *22. <u>Men of Mathematics Poster - Biographical Sketches</u> | IBM |
| 23. <u>Unique Math Games</u> | Educational Insights |

Filmstrips

1. Challenge of Electronic Data Processing
2. UNA and UNIVAC

Banking Administration
Institute
UNIVAC

Poster set: Origins of Numbers
Field Trip: University of Del.-
Computer Center
Resource Person-Industrial Arts
Teacher

J. Weston Walch

* highly recommended material

C. Evaluation:

1. Students will be evaluated upon the completion of this activity.
2. Students will compile all research in a notebook divided into two sections:
 - a. Historical Information
 - (1) Mathematicians
 - (2) Mathematics machines (past-present)
 - b. Career Opportunities in and related information about data-processing and computers.

Unit Title: MAN AND THE CITY

I. Unit Overview: The school year is divided into five cycles four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Man and The City" explores the urban environment. Emphasis is placed on the functions, problems, advantages and disadvantages, and patterns that create the city phenomena. The major concentration stresses individual problem solving techniques.

II. Unit Content Outline:

A. Banking

1. Procedures

- a. Check-writing
- b. Balance sheets
- c. Account application cards
- d. Deposits and withdrawals
- e. Credits and debits

2. Services

- a. Checking account
- b. Savings account
- c. Savings certificates
- d. Loans/mortgages
- e. 24-hour banking

B. Consumerism

1. Saving/spending
2. Budgeting
3. Advertising
4. Comparative shopping

C. Occupations

1. Banking
2. Advertising
3. Brokerage/investments
4. Data processing
5. Real estate
6. Secretarial/clerical occupations

III. Unit Objectives:

1. The student will demonstrate his knowledge of the structure of the monetary system, banking activities, and consumer habits by recording the sales and cash flow of the school newspaper.
2. The student will develop consumer habits by solving practical problems.
3. Upon completion of this unit, the student will be able to analyze the structure of the monetary system.
4. The student will be able to investigate the various banking activities.

A. Criterion-Referenced Objectives:

1. The student will be able to correctly write five out of ten checks given payee, payor, date, check number, and amount of check.
2. Given date, amount of deposit or withdrawal (cash or check), account number, and depositor's name and address, the student will be able to prepare five out of ten deposit forms and five out of ten withdrawal forms used in conjunction with savings accounts.
3. Given a specific balance of savings account, the student will be able to compute the interest for each of the following periods:
 - a. daily
 - b. monthly
 - c. quarterly
 - d. yearly
4. The student will be able to distinguish between a correct and an incorrect endorsement by classifying the given endorsements.
5. The student will be able to diagram the route of a personal check from its origin as a payment to its designation as a cancelled check.
6. Given a supply of checks, deposit slips, balance sheets, and a worksheet of instructions, the students will operate a checking account for a period of two weeks.
7. The student will be able to acquire a working vocabulary of banking terms by creating a collage from newspaper clippings.
8. The student will be able to identify and describe in a paragraph at least ten banking occupations.
9. The student will apply the concept of wise saving and spending of one's earnings by writing two or three short essays relating individual case to his personal experience.
10. By formulating a weekly, a monthly, and a yearly budget, the student will demonstrate the concept of money management through organizing a list of expenses and a specific income.
11. The student will be able to correlate each of the following terms with the associated monetary value. Penny, nickel, dime, quarter, half-dollar, dollar.
12. Given ten situations in which the student must make "Change" from a purchase, the student will be able to compute a combination of paper money and coin to be used as the "change" in eight of these situations.
13. The student will be able to write money numbers with dollar marks and decimals in response to all ten verbal statements of the following format:
 Verbal Statement (teacher): "Eight dollars and three cents"
 Written Response (student): \$8.03
14. The student will be able to draw a diagram illustrating the Flow of Currency.

15. The student will be able to interpret the sales and cash flow of the school newspaper by plotting two graphs.
16. The student will be able to gather data about three typical consumer products by examining and testing them.
17. After having analyzed three case studies about people/families and their financial situation, the student will be able to critically evaluate the decisions made in each case through a class discussion.
18. After having examined a listing of available rentals in the Newark area from a local newspaper, the student will be able to prepare reasons for stating preferences.
19. Using advertisements of two or more food stores, students will be able to identify the variables affecting price differences by comparing and contrasting ten products.

B. Learning Activities:

1. The filmstrips provided in the Money Management Film-strip Library will be used to introduce and familiarize the student with banking and consumer vocabulary and activities. After the filmstrip, the student will have the opportunity to use the new vocabulary in a given case situation. Sometimes, the students will respond to these case situations by acting them out as a role-play. At other times, the students will write out a solution to the problem.
2. Students will each have a copy of the book and read it at each individual's pace. (There is no assigned time for this particular activity; it is a learning station approach). Some topics included in this pamphlet are "Currency and Coin in Circulation", "Current Types of U.S. Paper Money", "How Money Gets into Circulation", "When Money Gets Into Circulation", "When Money Wears Out", and "Counterfeit Currency". After reading the book, the students will use it as a reference to answer a set of questions written by the teacher. Once everyone has completed his activity, there will be a class discussion.
3. Making Change -- Given list of purchases, associated prices, and amount of money given by the buyer, the student will total the purchases, subtract that amount from the money paid to find the amount of change.
4. Work Association -- To familiarize the students with some common consumer words, teacher will read aloud an assortment of words. The student will write down the first words that come to mind. Examples from previous work include:

Teacher: "Social Security"
 "Consumer"
 "Guarantee"

Student: "Old Age"
 "Warehouse"
 "Money Back"

5. Budgeting --
 - a. Students will work with parents to complete a budget sheet entitled TAKE-A-LOOK. There are four basic sections: regular expenses, irregular expenses, income and balance. (This is not a requirement as parent's income and expenses can be considered confidential information).
 - b. A second class activity is one in which the teacher uses the blackboard to record information. After class discussions about fixed and flexible expenses and incomes as associated with various types of employment, students will list their fixed and flexible expenses and the source of income.
 - c. Students will use the information from Section 3 to write a weekly, monthly and yearly budget. This will give the student some experience in projecting total yearly income and expenses.
6. Students will develop three practical shopping lists:
 - a. buying groceries
 - b. buying Christmas gifts, family and friends
 - c. buying home furnishings.
 Students may use newspapers and magazines as resource materials.
7. Students will view a series of transparencies defining and illustrating correct and incorrect endorsements. As a follow-up, students will be given a series of "payee" titles with three endorsements for each and asked to choose the correct one.
8. The student will practice writing checks given payee, payor, date, check number and amount.
9. The student will operate a checking account using prepared blank checks, balance sheets and a worksheet. The student will write checks and record information on balance sheets by adding and subtracting check amounts. The worksheet will tell the student when he receives a paycheck and the amount, when he receives a bill, and when he might receive any additional income.
10. Each student who has access to a newspaper at home will be able to make this assignment. He will first make a shopping list of grocery items. If the list to be made is completed on the basis of a week's needs, it will serve as a better indicator of price differentials. When the student has completed his grocery list, the next step is to collect ads from at least two different stores. He should then try to find as many of the items on his list as possible. Once the students have completed their charts, the entire class will discuss with the teacher the reasons behind the price differences. (NOTE: This was a highly successful activity for many students).
11. Some students will read the two available pamphlets, "Profits of Development" and World Bank and IDA" (International Development Associations) as a preface to presenting a panel discussion for the other class members about the functions of and occupations within the World Bank.

12. Some students will solve the following problem as an independent study project. "Imagine you work for the school district. Your position involves designing a school improvement plan. You have \$1,000,000 to spend this year. Your plan involves buying one item per school month." The students are to use magazines, newspapers, and catalogues for pictures and prices. An explanation of why each particular item was chosen must accompany the picture. All the work should be compiled in a notebook with a cover-title page.
13. Students will use The Encyclopedia of Careers and Vocational Guidance to research various related occupations from the following career areas: advertising, banking, brokerage and investments, data processing, mathematics and real estate.
14. Speaker from local bank, Wilmington Savings Fund Society. Topic: "Bank Teller to Manager".
15. Field trip to Franklin Mint in Philadelphia, Pennsylvania.
16. Students will complete the following forms: Social Security number application, job application, charge account credit application.
17. Newspaper accounting -- Students will complete two graph. One will depict the number of copies sold and the second will illustrate money intake/output.
18. Students will see a demonstration given by a representative of the Newark Chamber of Commerce on "Shoplifting".
19. Students will have the opportunity to examine a series of advertisements of Newark, Delaware rentals. After comparing and contrasting each ad, the student will state their preferences and explain why they made their particular choices.
20. Students will design and write an advertisement to sell a new product.
21. Using the booklet, It's Your Money, students will examine different styles of advertising, i.e., the "lying" ad, the "mis-leading" ad, the "scare" ad, the "rush-rush" ad, and the super-bargain" lead in. Students will also use the Consumer Bulletin to compare products mentioned in the ads.
22. Some students will learn how to complete an individual tax return for the U.S. Government.
23. Field trip to New York City to visit the American Stock Exchange and the Chase Manhattan Bank Money Museum.
24. Students will experiment with various products and report results (Technology for Children). For example:
 Experiment #1: Scouring Pads
 Experiment #2: Canned Fruit
 Experiment #3: Taste Preferences -- Canned Vegetable and Fruit Juices

C. Materials:

- | | |
|--|---|
| 1. Budget Envelopes | Sperry and Hutchinson |
| 2. <u>Careers for the 70's-</u>
<u>Securities</u> | Crowell-Collier Press |
| 3. "Counterfeit?" | Federal Reserve Bank of Atlanta |
| 4. "Federal Reserve Systems" | Federal Reserve Bank of Atlanta |
| 5. <u>Fundamental Facts About</u>
<u>United States Money</u> | Federal Reserve Bank of Atlanta |
| *6. <u>How Our Bank Helps Our</u>
<u>City</u> | Manufacturer's Namover Trust |
| 7. "How to be a Better
Shopper" | Sperry and Hutchinson |
| 8. <u>How to Earn Money</u> | Bill and Sue Severin |
| 9. <u>How to Manage Your Money</u>
<u>Family Finance Handbook</u> | Bank of Delaware |
| *10. It's Up to You | Institute of Life Insurance |
| *11. <u>Its Your Money: A Guide</u>
<u>to Saving and Spending</u> | Xerox |
| *12. <u>Jobs in Your Future</u> | Scope (Scholastic Book Services) |
| *13. <u>Journey Through A Stock</u>
<u>Exchange</u> | American Stock Exchange |
| *14. <u>Making the Most of Your</u>
<u>Money</u> | Institute of Life Insurance |
| 15. <u>Modern Money Mechanics:</u>
<u>A Workbook on Deposits,</u>
<u>Currency, and Bank Re-</u>
<u>serves</u> | Federal Reserve Bank of Chicago |
| *16. Money Management Library | Money Management Institute -
Household Finance Corporation |
| *17. <u>A One-Week Advanced Teach-</u>
<u>ing Unit on Consumer</u>
<u>Credit</u> | Finance Association |
| 18. <u>Personal Money Management</u> | ABA |
| 19. <u>Profiles of Development-</u>
<u>World Bank Group</u> | World Bank |
| 20. <u>Reader's Guide to Period-</u>
<u>ical Literature</u> | |
| 21. <u>Smart Saving Borrowing</u>
<u>Budgeting and Take-A-</u>
<u>Look Worksheet</u> | CUNA |
| *22. <u>Story of Checks, The</u> | Federal Reserve Bank of New York |
| 23. <u>Story of Money from</u>
<u>Barter to Banking, The</u> | Chase Manhattan Bank |
| *24. <u>Technology for Children</u> | June, 1972 |
| 25. U.S. Dept. of Treasury | Individual Income Tax Returns |
| 26. <u>Using Bank Services</u> | ABA |
| *27. "What Truth in Lending
Means to You" | Board of Governors of the Federal
Reserve System |
| 28. <u>World Bank and IDA</u> | International Development Assoc. |
| 29. "You and Your Money" | Federal Reserve Bank of Richmond |
| *30. "Youth in the Market-
place" | Sperry and Hutchinson |

Films

- | | |
|--|---|
| 1. <u>Credit</u> | Modern Talking Picture Service |
| 2. <u>Impulse '00</u> | Modern Talking Picture Service |
| *3. <u>Money Management Filmstrip</u>
Library | Money Management Institute -
Household Finance Corporation |
| 4. <u>Opening Day at the Golden</u>
<u>Rule</u> | Associated Films, Inc. |
| 5. <u>Pacesetter in Aisle No. 3,</u>
<u>The</u> | General Mills, Inc. |
| 6. <u>Supermarket, The</u> | Sperry and Hutchinson |

Filmstrips:

- | | |
|------------------------|----------------------------|
| 1. Being a Good Teller | Bank Association Institute |
| 2. Cashing Checks | Bank Association Institute |
| 3. Clerks and Robbers | Allied Stores Corporation |
| 4. Inside Job, An | Allied Stores Corporation |

Slide Presentation - "To Market,
to Market"

Sperry and Hutchinson

Speakers - Chamber of Commerce
"From Bank Teller to
Manager"
Careers in Banking

"Shoplifting"

Wilmington Savings Fund Societ

Field Trips - Chase Manhattan Bank Money Museum
American Stock Exchange
Franklin Mint - Philadelphia

Evaluation:

The students will be evaluated upon the completion of these activities:

1. Students will complete three budgets: a weekly, a daily, and a yearly budget. The completeness and accuracy of the Expenses and Income sections will be specific points for evaluation.
2. The Word Association Exercise will be administered as a Post Test. The results will be evaluated on the basis that a student will associate the words with the field of money management instead of general terms.
3. Students will complete the checking account activity as previously described. All checks will be evaluated on neatness, spelling and capitalization, and correct information. The balance sheet will be evaluated line by line, i.e., correct information under the different headings and correct calculations.
4. Each student will complete a comparative price listing as previously described.
5. Students will complete a series of twenty-four questions relative to the banking and related field occupations.

6. Each student will complete:
 - a. a social security number application form
 - b. a job application form
 - c. a charge account/credit application
 This is specifically designed to test the student's ability to complete a form by following directions.
7. Students will complete two graphs: one will depict the number of newspaper copies sold and the second will illustrate money intake/output.
8. Each student will be responsible for completing an original advertisement.

Unit Title: MAN AND NATURE

- I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Man and Nature" delineates the possibilities and limitation of the natural environment. Man's relation to his natural surroundings is explored through activities designed to challenge creativity and develop methods of inquiry.

II. Unit Content Outline:

- A. Geometry in Theory
 - 1. Coordinate Geometry
 - 2. Point, lines, angles, closed figures
 - 3. Polygons
 - 4. Polyhedrons
- B. Geometry in Construction
 - 1. Paper and straw models
 - 2. Designs with string
 - 3. Creations with paper

III. Unit Objectives:

- 1. After a class demonstration and student manipulation of measurement instruments, students will demonstrate proficiency with these.
- 2. After completion of this unit, the students will be able to measure the length of various objects and compute the distance between two points on a map.
- 3. Upon completion of this unit, students will be able to examine various objects, measure their length, width, and height, and finally construct a scale drawing.
- 4. Upon completion of this unit the student will be able to map a defined area.
- 5. Upon completion of this unit, students will be able to interpret and apply road maps and tourist guides.

IV. Unit Description:

- A. Criterion-Referenced Objectives:
 - 1. After examining twenty posters, the student will be able describe each geometrically by listing at least 5-two or three dimensional shapes suggested in each poster.
 - 2. Given five (5) photographs of complex structures (i.e., buildings, bridges), the student will be able to answer fifteen questions relating geometric shapes to the structure.

3. Students will be able to construct from cardboard, construction paper, or straws at least two polyhedron to serve as geometric models.
4. The student will write a book review of the book, Flatland or The Dot and the Line.
5. The student will be able to explore one facet of being an artist by experimenting with various materials and shapes to create a minimum of two projects.

B. Learning Activities:

1. Students will work through a workbook entitled Point Count-A-Point to familiarize themselves with the concepts of coordinate geometry.
2. Teacher will give a series of talks about the "undefined" geometry, i.e., the point, the line, the plan. The student will then view a series of transparencies defining a "closed curve" and illustrating the basis polygons. A second transparency presentation depicts the "Quadrilateral Tree".
3. Given a series of teacher constructed posters*, the students will interpret each poster by choosing the specific items which represent geometric figures.
*Posters are very simple in design. Select a number of magazine pictures including some of outside scenery, table place settings, and clothing advertisements. Cut them out and paste to poster board. Number each poster in order that students may keep an accurate listing of their objects and geometric shapes.
4. Each student will look at approximately five photographs of various structures, i.e., farm houses, buildings, and bridges and then answer questions about each (Environmental Geometry Poster Set).
5. Students will construct polyhedron models by using patterns for tracing these shapes on construction paper. Other students may choose to make their models with straws and thread. This is more difficult manipulation, however some students find it a challenge.
6. Some students will read the book(s) Flatland and The Dot and the Line.
7. Students will use art materials to experiment with various shapes by paper cutting, folding and glueing. The specific models are taken from the book Creating With Paper.
8. Using stimuli from nature and the environment, students will experiment with various types of string, cord, twine, and rope to design an abstract pattern.

C. Materials:

- | | |
|-------------------------------------|------------------|
| *1. <u>An Adventure in Geometry</u> | Anthony Ravielle |
| 2. <u>Arithmetic Teacher, The</u> | NCTM |
| *3. <u>Creating With Paper</u> | Pauline Johnson |
| 4. <u>Dot and the Line, The</u> | Norton, Juster |

- | | |
|--|------------------------|
| *5. <u>Designing with String</u> | Mary Seyd |
| 6. <u>Flatland</u> | Edwin A. Abbott |
| 7. <u>Fun With Figures</u> | Mae and Ira Freeman |
| 8. <u>Point-Count-A-Point Geometry</u> | Geo. Barr McCutchen |
| 9. <u>Polygons - Points in a Plane</u> | Marnie Luce |
| 10. <u>Straw Polyhedra</u> | Mary Laycock |
| Set of Photographs | Environmental Geometry |
| | ARC |
| Poster Set | Math in Nature - |
| | J. Weston Walsh |

*highly recommended material

Addresses:

- | | |
|--------|---|
| ABA | American Banker's Association
Marketing/Savings Division
90 Park Avenue
New York, New York 10016 |
| AMEX | American Stock Exchange
86 Trinity Place
New York, New York 10006 |
| ARC | Activity Resources Company, Inc.
24827 Calaroga Avenue
Hayward, CA 94545 |
| CUNA | Credit Union National Association, Inc.
Box 431
Madison, WI 53701 |
| IBM | International Business Machines
Armonk, NY 10604 |
| NEA | National Education Association
for "Think Metric" order from
American Education Week
P.O. Box 327
Hyattsville, MD 20781 |
| NCTM | National Council of Teachers of Mathematics
1201 Sixteenth Street, NW
Washington, DC 20036 |
| UNIVAC | UNIVAC - Division of Speery Rand Advertising-Sales
Promotion
P.O. Box 8100
Philadelphia, PA 19101 |

D. Evaluation: Students will be evaluated upon the completion of the following activities.

1. Some students will complete the workbook, Point-Count-A-Point.
2. Students will complete a listing of geometric shapes depicted in a series of posters. The evaluation will be based upon the completeness of the list.
3. Students will be responsible for making at least one creation with paper and one design with string. Creativity and neatness will be the basis for the final evaluation.

SCIENCE

Unit Title: THE WORLD OF PLANTS

- I. Unit Overview: In the first unit, the students are exposed to the area of biology. Discussions center around these questions: What is Biology?, What areas are explored in Biology?, What did some famous Biologists study?, How does a scientist approach a problem and gather information about it? Students will explore what jobs are available in the various branches of biology and will expand the section on "Men of Biology" to include other areas of science.
- II. Unit Content Outline:
 - A. Defining Biology
 - B. Branches of Biology
 1. Areas Studied
 2. Career Opportunities
 - C. Men of Biology
 - D. Scientific Method
 - E. Gathering Information
- III. Unit Objectives: The student should be able to:
 1. list various fields of Biology and identify what is studied in each one.
 2. identify career opportunities in each of the discussed biology fields.
 3. name some famous scientists and identify what they did to help advance science.
- IV. Unit Description:

Unit Objective #1: The student should be able to list various fields of Biology and identify what is studied in each one.

 - A. Criterion-Referenced Objective:
 1. The student will be able to list at least five branches of Biology.
 2. After listing each branch above, the student will give a written explanation of what is studied.
 - B. Learning Activities: (Learning Activities for Objective #1 and #2 are grouped together.)
 1. Class discussions concerning topics on the prepared outline of the unit (A copy is included).
 2. Group Activity-four to five students will work together to list as many branches and related occupations of biology as possible. Some type of incentive could be offered here to encourage participation, such as extra credit points to the team with the greatest number of correct answers. This will be followed by a discussion

- where the tree of biological branches and occupations transparencies will be shown (copies are included).
3. The class as a group will view the filmstrip "Careers in Science".
 4. Upon completion of the filmstrip, the students will have the balance of the period to listen to the many cassettes that are available concerning different careers in science.
 5. A reading rack is present in the room which contains an assortment of reading materials concerning careers in science. Students may look at this material at any time. These materials may also be read on the one day a week in science which is devoted to Sustained Silent Reading. The reading rack will be available at all times.

C. Materials:

1. Outline of the unit (Copy included).
2. Transparencies - showing Branches of Biology and Occupations (Copy included).
3. Filmstrip - "Careers in Science" available from Denoyer-Geppert Audio Visuals, 5235 Ravenswood Avenue, Chicago, Illinois, 60640.
4. Cassettes many tapes which describe various aspects of different occupations in the sciences are available from many sources:
 - a. Creative Visuals
Box 1911-V3
 - b. The Baker and Taylor Company
Audio Visual Services Division
P.O. Box 230
Mokena, Illinois 60954
 - c. Classroom World Productions
903 Caddington Avenue
Silver Springs, Maryland 20901
5. There are several other sources.
Reading Rack - many free or inexpensive (10 to 15 cents) reprints are available from "Occupational Outlook Handbook" published by the U.S. Department of Labor.

Unit Objective #2: The student should be able to identify career opportunities in each of the discussed biology fields.

A. Criterion-Referenced Objectives:

1. The student will be able to list at least one career opportunity for each branch they listed in the Criterion-Referenced Objective #1 and #2.

B. Learning Activities:

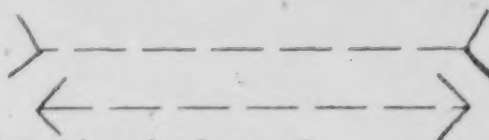
Same as used for objective #1. They are as follows:

1. Class discussions concerning topics on the prepared

- outline of the unit (a copy is included).
2. Group Activity - four to five students will work together to list as many branches and related occupations of biology as possible. Some type of incentive could be offered here to encourage participation, such as extra credit points to the team with the greatest number of correct answers. This will be followed by a discussion where the tree of biological branches and occupations transparencies will be shown (copies are included).
 3. The class as a group will view the filmstrip "Career in Science".
 4. Upon completion of the filmstrip, the students will have the balance of the period to listen to the many cassettes that are available concerning different careers in science.
 5. A reading rack is present in the room which contains an assortment of reading materials concerning careers in science. Students may look at this material at any time. These materials may also be read on the one day a week in Science which is devoted to Sustained Silent Reading. The reading rack will be available at all times.

- I. Biology - Bios = Life Logos = Study of
- II. Branches of Biology and the Work Men Do (Complete this section during our discussion)
- III. Men of Biology
 1. Aristotle - Born in Greece 384 BC - "Father of Biology"
 2. Anton Van Leewenhoek - Dutchman who perfected the microscope in the mid 1600's. Micro-organisms were found. "Animacules"
 3. Robert Hooke - An Englishman credited with the discovery and description of cells in 1665. He used a piece of cork in his studies.
 4. Carolus Linnaeus - A Swedish Biologist - 1753 he started our modern system of classifying plants and animals according to structural similarities.
 5. Charles Darwin - Shook the world in 1859 with his Theory of Evolution.
 6. Gregor Mendel - A monk who published his work on the basic laws of heredity in 1865. It was not recognized until 20 years after his death as "Father of Genetics".
 7. Dr. Jonas Salk - Developed polio serum; inoculation of school children started in 1954.
- IV. Methods of Science
 1. Define the problem.
 2. Gather known information - find out what others have done in relation to the problem.
 3. Form a hypothesis - an educated guess to the solution of the problem.
 4. Experiment-to test the hypothesis, keeping an open mind that it could be wrong.
 5. Observe the experiment.
 6. Organize and record all data from the experiment.
 7. Draw a conclusion.
 8. Report accurately all research methods, results and conclusions. This is for the benefit of other scientists.
- V. Gathering Information
 1. From authority.
 - a. Simplest method.
 - b. Danger, authorities are not always correct.
 2. From observations.
 - a. Use our senses such as: seeing, hearing, smelling, tasting and feeling.
 - b. Using one's own senses is not always dependable for observations, such as the sense of feeling and seeing.

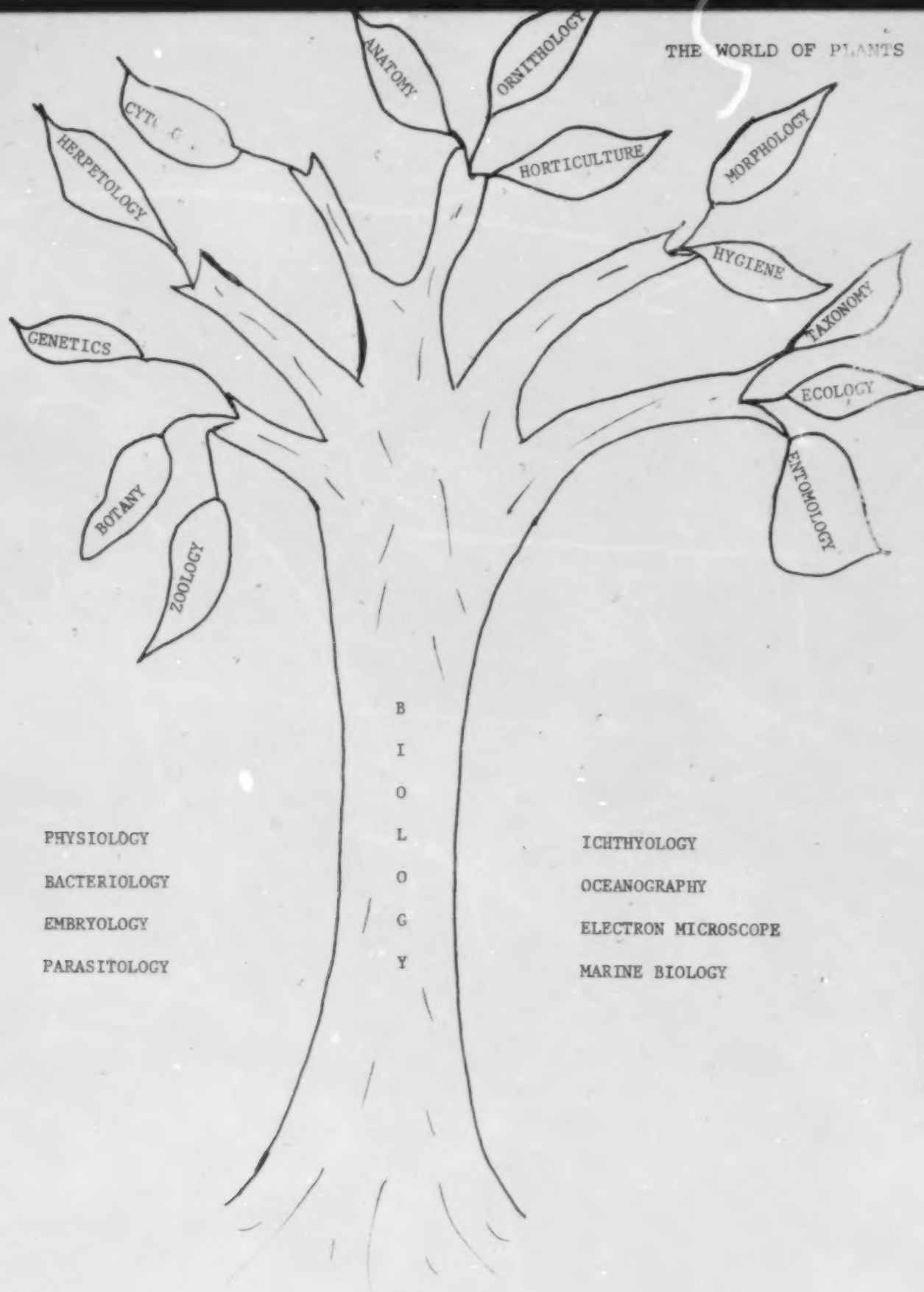
1. Sometimes our senses are not accurate enough.



Which line is longer?

2. Sometimes our senses are misleading.
 - c. Use other methods such as: counting, weighing, measuring, etc.
 - d. Scientists have devised instruments to extend the senses.
 1. Such instruments as the microscope, X-ray machine, analytical balance, etc., help to see things that we could not see with the unaided eye and to give more accuracy in observation.
 2. From trial and error (try and see or using common sense).
 - a. Much human learning results from this method.
 - b. Most important "instrument" of all is the brain. Used for thinking.
 3. From trial and error (try and see or using common sense).
 - a. Much human learning results from this method.
 - b. Many scientific discoveries have been made in this way.
 4. From the experiment or investigation--making nature answer a question under condition controlled by the observer.
 - a. Two items are necessary for comparison.
 1. The control item which is kept constant.
 2. The variable item which is being tested.
 - b. There should only be one question to be answered at one time.
 - c. There should be a large number of cases in both the variable and the control items.
 1. "Numbers" of experimental objects or items.
 2. "Numbers" of experiments or trials.
 - d. The investigation should be such that anyone with the necessary skill could repeat it.
 - e. The conclusion should answer the problem set up for investigation.
 5. From "Eureka" or inspiration (the "educated guess").
 - a. Sometimes you work very hard on a problem and you just can't seem to solve it after trying again and again. Finally you give up and turn to something else. Then suddenly in the middle of your new activities you get a hunch, an inspiration or a "Eureka" about the previous problem. You apply your inspiration and the problem is solved easily.
 - b. Many scientific problems are solved with the help of an "educated" guess because this is based upon an accumulation of facts; it is not a wild guess.





A FEW OF THE AVAILABLE JOBS IN BIOLOGY

Herpetologist	Farmer
Microbiologist	Research Technician
Bacteriologist	Agronomist
Veterinarian	Soil Conservationist
Dental Assistant	Exterminator
Immunologist	Geneticist
Gardener	Park Management
X-Ray Technician	Landscape Architect
Medical Secretary	Fisherman
Biochemist	Druggist
Entomologist	Florist
Environmentalist	Marine Biologist
Horticulturists	Taxodermist
Landscape Aide	Taxonomist
Conservation Officer	Park Guide

Unit Objective #3: The student should be able to name some famous scientist and identify what they did to help advance science.

A. Criterion-Referenced Objective:

1. Given five (5) multiple choice questions which indicate a contribution to science, the student will determine which scientist made that contribution.

B. Learning Activities:

1. Class discussions concerning topics on the prepared outline of the unit (a copy was previously included).
2. The class as a group will view the filmstrip "Great Names in Biology".
3. Groups of students will be required to view three of six filmstrip-cassette kits included in the "Men and Ideas" series and complete the worksheet which is included. Two periods will be allowed. When the work is completed, the student will proceed to activities 4 and 5.
4. Students may complete the Hidden Scientist Work-A-Gram (copy included).
5. The reading rack will be available at all times. (This was discussed under objective #1.)

C. Materials:

1. Outline of the unit (copy previously included).
2. Filmstrip - "Great Names in Biology" produced by Encyclopedia Britannica and available through Wards Natural Science Est., Inc., P.O. Box 1712, Rochester, New York, 14603.
3. Filmstrip cassette kit - "Men and Ideas" available through Kunz, Inc.
4. Worksheets which correspond to the "Men and Ideas" filmstrip (copy is included).
5. Puzzle-Hidden Scientists Work-A-Gram written by Catherine Y. Bonney, Newark School District.
6. Posters for bulletin board - "Great Men in Biology" series available from J. Weston Walch, P.O. Box 658, Portland, Maine.
7. Book for general reference - Who's Who in Science available from Marquis Who's Who, Inc., P.O. Box 202 Haddonfield, New Jersey, 08034.
8. Reading rack-many free or inexpensive (10 to 15 cents) reprints are available from "Occupational Outlook Handbook" published by the U.S. Department of Labor.

INSTRUCTIONS: These questions are to serve as a guide while you watch the cassette filmstrips. You are only required to answer the questions for three (3) of the six (6) filmstrips, but you should become aware of the ways in which all of these men helped to advance science.

Robert Hooke

1. What type of devices did Robert Hooke help to refine or improve?
2. What other famous scientist did Hooke work under?
3. What work did Hooke do that he presented to the Royal Society of London?
4. Many observations were made with Hooke's microscope. Describe his observation of cork and explain what word he used to describe the parts he saw.
5. Name three other devices that Hooke refined or invented and tell what its purpose was.
 - 1)
 - 2)
 - 3)
6. What other types of work was Hooke involved with during his life?
7. Name and explain the law which was developed by Robert Hooke.

Marie Curie

1. How could Marie's father's career have influenced her choice of jobs?
2. What type of job did Marie have after high school?
3. Was this the job that would give her worldwide fame?
4. How did she become famous?
5. What can Radium do?
6. What kind of honors did Marie Curie receive for her scientific discovery?
7. What led to her death?

Luther Burbank

1. What area of biology was Burbank interested in?
2. What type of experiments made him famous?
3. What did Burbank try to do to plants?
4. Explain the process used by Burbank to develop red poppies from yellow poppies? (Answer in several sentences.)
5. What is selection?
6. To what other plants did Burbank apply the idea of selection?
7. What is a plumcot?

Galileo Galilei

1. What indicated that Galileo was interested in the sciences as a youngster?
2. As a teacher what did Galileo tell his students about observing?
3. What did Galileo and his students determine about falling objects?
4. Explain Galileo's experiment on pendulums (ball connected to a chain).
5. What is needed before the results of an experiment can be safely used?
6. What did Galileo teach us?
7. Take some objects and repeat Galileo's experiment on falling objects.

George Gaylord Simpson

1. What did Simpson study?
2. What are fossils and how did Simpson use them?
3. What did Simpson's job with the American Museum of Natural History include? Name at least three (3).
4. Explain how the scientist sorts the fossils.
5. When the fossil bones were sorted and ordered, what was Simpson able to do?
6. Through the study of fossils what can be found out about today's horse?

Albert Michelson

1. What is the main question in science that Michelson tried to answer?
2. How did Michelson's high school experiences help to encourage his choice of science as a career?
3. What other jobs did Michelson have before he started to do research?
4. What did Michelson do when not teaching science-what type of research did he do?
5. What was Michelson able to tell man about the stars?
6. What other characteristic of light did Michelson investigate besides its speed?
7. In what other ways did Michelson measure the speed of light, to make his first measurement more precise?

D. Evaluation:

Where appropriate, each unit should include a pre and post test of unit objectives, pre and post tests do not have to be of the pencil and paper type. Items such as projects and oral reports are appropriate. The source of pre and post items should be the unit and criterion-referenced objectives developed for the unit.

The test for the unit on "The World of Plants" follows. The following information indicates the questions which are used as a measure for each CRO.

<u>CRO</u>	<u>Number of Test Question</u>
#1	21, 24, 27, 30, 33
#1	22, 25, 28, 31, 34
#2	23, 26, 29, 32, 35
#3	12, 14, 17, 19, 20

TEST

- I. FILL-IN: Write the correct answer on your answer sheet.
(Each question worth 3 points.)

1. The most important "instrument" of all for man is the _____
2. How many questions should you try to answer when running an experiment? _____.
3. "ology" means _____.

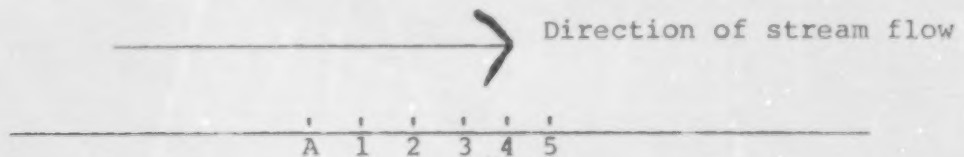
- II. ARRANGE THE FOLLOWING Points of the Scientific Method in the correct order. Write only the correct letter on the answer sheet. (Each question worth 2 points.)
Questions 4-11

- a. Form a hypothesis
- b. Observe
- c. Draw a conclusion
- d. Define the problem
- e. Report results
- f. Organize and record data
- g. Experiment
- h. Gather know information

- III. MULTIPLE CHOICE: Choose the answer which best completes each sentence. (Each question worth 3 points.)

12. The man who is called the "Father of Biology" is
 - a. Leeuwenhoek
 - b. Aristotle
 - c. Hooke
 - d. Read

13. The Scientific Method can best be described as
 - a. a method for gathering data
 - b. a logical organized method for investigating a problem
 - c. a method for examining data
 - d. the opposite of superstition
14. The basic laws of heredity were made by
 - a. Robert Hooke
 - b. Carolus Darwin
 - c. Jonas Salk
 - d. Gregor Mendel
15. A control item in an experiment is one which
 - a. is being tested
 - b. is kept constant
 - c. is constantly changing
 - d. is not important
16. "bios" means _____.
17. The discovery and description of cells was done in 1665 by
 - a. Marie Curie
 - b. Robert Hooke
 - c. George Simpson
 - d. Galileo Galilei
18. Sewage is being pumped into a stream at point A



Water samples are taken at points 1-5. Pollution was highest at 1 and lowest at 5, but 5 was still polluted. The problem was, "Does sewage dumped at "A" add to the pollution of the stream?"

The best control for this experiment would be

- a. take water samples above point A.
 - b. take water samples of an unpolluted stream
 - c. take water samples of points further downstream from 5
19. Polio Serum was first developed by
 - a. John Mendel
 - b. Jonas Salk
 - c. Carolus Linnaeus
 - d. Robert Hooke
 20. Obtaining better plants by the process of selection is an example of work done by
 - a. Anton Van Leeuwenhoek
 - b. Charles Darwin
 - c. Luther Burbank
 - d. Albert Michelson
- IV. Complete the following chart as shown by the example. Be sure to put your answer on the answer sheet, not the test! (Each question worth 2 points.)

<u>Branch of Biology</u>	<u>What is Studied</u>	<u>A Career Opportunity</u>
Example: Ecology	Relationship between plants and animals	Forest Ranger

- | | | |
|-----|-----|-----|
| 21. | 22. | 23. |
| 24. | 25. | 26. |
| 27. | 28. | 29. |
| 30. | 31. | 32. |
| 33. | 34. | 35. |

V. Essay Question: (Worth 18 Points)

As you look around the world you can see a lot of problems: hunger, war, pollution, race conflicts, overpopulation, dwindling resources, etc. How do you feel about these problems and what do you plan to do when you grow up to make this a better world? In answering this question, you should use at least half of the back of your answer sheet.
 Note to teacher: Full credit is given to any student who attempts to answer this question. It is only given in an effort to learn more about the thoughts and feelings of each student.

VI. Extra Credit: (5 points - one point for each question.)

In a controlled experiment 200 geranium, 200 sunflower, and 200 lettuce seeds were exposed to X-rays. They were planted to see how many would grow. The following is the data gathered.

	<u>Geranium</u>	<u>Sunflower</u>	<u>Lettuce</u>
% growing	30	10	95

Note: 95% of all these seeds not exposed to X-ray grew. Which are good conclusions, which bad? (Use "A" if good and "B" if bad.)

36. Lettuce seeds are not affected by radiation.
37. Sunflower seeds are affected by radiation more than geranium seeds.
38. Geranium seeds are affected by radiation more than lettuce seeds.
39. Radiation destroys All seeds.
40. What would be the best control for the above experiment?
 All other conditions are exactly alike.
 - a. 100 of each seed X-rayed, 100 not.
 - b. 200 of each seed X-rayed, for 1/2 the time as the experimental
 - c. 200 of each seed not exposed to X-ray.

I. Unit Overview:

(Laboratory Activity)

This unit consists of 21 labs. Five of these labs are required for every student, then they pick ten of the remaining sixteen labs to fulfill the requirement of fifteen completed labs. After each lab is completed, the student takes a very short test on that section, rather than having a longer unit test in the end. When the requirements have been completed, the student may either work on the remaining six labs or do various special projects after teacher approval. One of these labs is titled "Plant Appreciation", and it consists of a slide show with written dialogue which takes the student on a tour of Longwood Gardens in Kennett Square, Pennsylvania. This is used as the leadup to an activity which deals with Plant Career available at a place such as Longwood Gardens.

II. Unit Content Outline

1. Flower Anatomy
2. Gas Production by Plants
3. Gas Consumption by Plants (Demonstration)
4. Root Growth
5. Chlorophyll (Demonstration)
6. Chloroplasts
7. Monocot and Dicot Seeds
8. Monocot and Dicot Stems
9. Tropisms
10. Transport of Water
11. Parts of a Fruit
12. Seed Dispersal
13. Leaf Cross Section
14. Woody Stem
15. Pollen
16. Leaf Veination
17. Plant Appreciation
18. Plant Types
19. Plant Cell
20. Cells and Salt
21. Plant reproduction

III. Unit Objectives: The student should be able to identify the titles and duties of careers available in the World of Plants.

A. Criterion-Referenced Objective:

On a test, the student should be able to match correctly 80 percent of the given job titles with their respective duties and write a detailed description of the duties and required training for one of the jobs explored during the unit.

B. Learning Activities:

1. Slide show - students will view a series of slides with a written dialogue which takes them on a tour of Longwood Gardens.
2. Worksheet (included) where students will match job titles with job description and then use material in the reading rack to investigate more deeply two of the jobs.
3. A trip to Longwood Gardens. If you call in advance, they will provide you with guides and only charge half price for admission. You could take a trip to any botanical gardens.

C. Materials:

1. A series of slides prepared by the teacher with a written dialogue which takes the students on a tour of Longwood Gardens or any other botanical garden. An example of a dialogue is included.
2. Worksheet - previously explained (sample included).
3. Various pamphlets and folders which discuss the career opportunities indicated on the worksheet should be available in a reading rack.

D. Evaluation:

TEST - Plant Appreciation

Match the following job titles with the best description of the proper duties.

- | | |
|---|---|
| _____ 1. Landscape Architect | A. takes care of lawns, gardens, etc. |
| _____ 2. Plant Pathologist | B. specializes in planting and cultivating in a greenhouse |
| _____ 3. Taxonomist | C. one who studies plants |
| _____ 4. Tree Surgeon | D. classifies the different types of plants |
| _____ 5. Groundskeeper | E. designs the gardens |
| _____ 6. Plant Propagator | F. travels around the world to obtain samples of different plants |
| _____ 7. Greenhouse Worker | G. specializes in starting new plants |
| | H. studies plant diseases - their causes and cures |
| | I. repairs and trims trees |
| 8. - 10. Choose a job which deals with plants and give a detailed description of the duties and required training | |

PLANT APPRECIATION

Longwood Gardens

Slide numbers are indicated by the numbers in the parenthesis.

One of the most beautiful exhibits of plants in the world is a few miles from your doorstep in Kennett Square, Pennsylvania. Plants which cannot live outside year round are kept in buildings called conservatories (2,3). Pictured here is the main conservatory. Some of the rooms contain common flowers found around your home such as Narcissus (4,5), Grape Hyacinth (6,7), Tulip (8,9), or tropical flowers such as the Bird of Paradise (10). Flower exhibits are changed with the seasons so that there are Lilies during Easter (11,12) and Pointsettias (13) for Christmas. What color is the flower of the Pointsetta? If you guessed pink, you are wrong. The pink that you see is on the sepals; the actual flower, which is not present, is yellow. A new room, which is called the Azalea Room (14,18), was recently added. It was designed by Philips Fox, an architect firm in Newark. One of the rooms in the conservatory contains only Orchids (19,20).

Many plants are put in rooms which try to duplicate their natural environment. Examples of this are the Desert Room (21,22,23), which has a high temperature and low humidity, or the Tropical Room (24,25,26,27), which has high temperature and high humidity. Plants such as the Banana (28), Pineapple (29), and the Pitcher Plant (30) can be seen here. From the Pitcher Plant hangs a pitcher which collects water. Insects fall into this and are digested by the plant. Tropical plants called Water Platters (31) can be seen outside in the summers. Each leaf can support about 150 pounds.

Along the many outdoor paths a variety of plants can be seen from fungus (32,33) to beautiful flower beds (34,35). Besides the plants people are attracted by the beautiful lakes (36) and the fountains (37).

Station - Plant Appreciation

As you viewed the slides of Longwood Gardens, did it occur to you that a large variety of jobs are involved with a collection of plants such as this? Below are a list of some of the job titles and work description. See if you can match the description with the proper title. Feel free to use any of the materials in the reading rack.

<u>Titles</u>	<u>Duties</u>
_____ 1. Specimen Collector	A. Does crossing and self-pollination of plants
_____ 2. Landscape Architect	B. Trims and repairs trees
_____ 3. Taxonomist	C. One who studies plants
_____ 4. Plant Propagator	D. Designs the gardens
_____ 5. Plant Breeder	E. Cares for gardens, lawns, etc.
_____ 6. Plant Pathologist	F. Specialize in starting new plants
_____ 7. Biological Photographer	G. Grows plants for use in the plant exhibits
_____ 8. Horticulturist	H. Travels around the world to obtain samples of different plants
_____ 9. Nurseryman	I. Classifies the different types of plants
_____ 10. Tree Surgeon	J. Photographs the plant displays
_____ 11. Botanist	K. Specializes in planting and cultivating in a greenhouse
_____ 12. Grounds Keeper	L. Studies causes and cures of plant diseases
_____ 13. Greenhouse Worker	M. Studies vegetables, fruit, flowers, shrubs, trees, lawns, and tries to improve yield and quality

Now choose two of the above jobs and use information in the reading rack to give a more detailed description of the duties, and required training.

Unit Title: HEREDITY AND ENVIRONMENT (LA)

I. Unit Overview: Knowing how to recognize and understand hereditary traits and environment will enable the low ability student to better understand themselves and other people.

II. Unit Content Outline:

A. Heredity

1. Traits
2. Family Tree
3. Personal Information
4. Identification of Body Parts

B. Environment

1. Personal Information
2. Identification of Environment
3. Environmental Relationship
4. Jobs within the Individuals Environment

III. Unit Objectives: The student will be able to...

1. define the term hereditary trait.
2. construct in written form family tree.
3. fill out a personal information form.
4. identify family traits and correctly transfer them to a drawing.
5. identify parts of his body.
6. identify pictures of his physical surroundings.
7. chart physical and social environment and describe jobs.
8. discuss and write environmental experiences.
9. conduct an interview with an adult.

IV. Unit Description:

Unit Objective #1: The student will be able to define the term hereditary trait.

A. Criterion-Referenced Objective:

1. The student will be able to correctly define the term "hereditary trait" orally.
2. Given 15 minutes the student will correctly circle five (5) hereditary traits from a list of 15 physical and personality traits.

B. Learning Activities:

1. Class discussion of heredity and related terms.
2. List different traits on the board and discuss what kind they are.
3. Using words in a sentence "freckles," "heredity," "mistaken," "traits."
4. Activity sheet.
5. "No One Looks Like You" Reading Activity"

Unit Objective #2: The student will be able to construct in written form a family tree.

A. Criterion-Referenced Objectives:

1. The student will be able to correctly define the term "family tree" orally.
2. Given a class period the student will correctly copy a family tree diagram from the blackboard.
3. Given the copied diagram and an evening at home the student will return a completed diagram including the names of maternal and paternal grandparents, parents and siblings.
4. Given the completed family tree diagram the student will reproduce two blank copies and will chart the traits of hair and eye color.
5. The student will discuss orally two hereditary and two non-hereditary traits.

B. Learning Activities:

1. Class discussion about family trees, display of family trees.
2. Construct a family tree copying the basic form from the blackboard.
3. Interview their parents for information including parents names and jobs, hair and eye color, siblings hair and eye color.
4. Draw the following:
 - a. Me
 - b. My house
 - c. My Family
 - d. My best friend
 - e. My favorite goods
 - f. My favorite activities
 - g. My favorite tasks at school
 - h. My least favorite task at school
 - h. My favorite tasks at home
 - My least favorite task at home.
5. Class discussion about family trees, display of family trees.
6. Draw a mug shot of yourself and write a description for a "Wanted - Dead or Alive" poster.

Unit Objective #3: The student will be able to fill out the Personal Information Form.

A. Criterion-Referenced Objectives:

1. The student will correctly spell his first name and last name orally and in writing.
2. The student will be able to recite and write his mailing address.
3. The student will be able to recite and write his phone number, age, and birthday.

4. Given the information the student will fill out the Personal Information Form including hair color, eye color, height, weight, blood type, and sex.
5. Given the information the student will fill out the Personal Information Form including school, parents names and occupations, names and ages of siblings, and place of birth.

B. Learning Activities:

1. Weigh themselves and measure how tall they are.
2. Have either the Red Cross or the school nurse check blood types.
3. Fill out Personal Information Forms A & B.
4. Mimeographed exercises to practice handwriting and spelling for Personal Information Forms.

Unit Objective #4: The student will be able to identify family traits and correctly transfer them to a drawing.

A. Criterion-Referenced Objectives: The student will...

1. orally identify distinct family traits.
2. be able to transfer the information about family traits to paper given a set of drawings.

B. Learning Activities:

1. Compile a scrap book entitled "This is me, this is my environment" including:
 - a. personal information forms
 - b. drawings
 - c. charts
 - d. interviews

Unit Objective #5: The student will be able to identify parts of his body.

A. Criterion-Referenced Objective:

1. The student will be able to read 20 body parts.
2. Given a scale drawing the student will be able to place the body parts appropriately.

B. Learning Activities:

1. Label a body parts diagram
2. Unscramble body terms.
3. Make a "funny body" picture using different heads, arms, legs, etc. from magazine pictures.

Unit Objective #6: The student will be able to identify pictures of his physical surroundings.

A. Criterion-Referenced Objectives:

1. Given a set of slides of Newark and surrounding areas the student will be able to identify 50% of the places.
2. The student will be able to define orally the term "environment".

B. Learning Activities:

1. View slides of Newark area.
2. Take a walk and list the thing you see and hear, compare lists.
3. Make a display showing environmental relationships. family--school--community--city--state--country--world.
4. Locate important services (ambulance, fire station, and police station in the telephone book and on a map.

Unit Objective #7: The student will be able to chart physical and social environments and describe jobs associated with these environments.

A. Criterion-Referenced Objectives:

1. The student will discover the basic needs of food, clothing and shelter through charting parts of his social and emotional environment.
2. Given a list of community workers the students will be able to list 5-10 workers that benefit the individual.
3. Given a list of food items the student will be able to list food needed for his family for three meals and cite food items which could be grown at home.
4. Given a list of clothing items the child will be able to name clothing which can be made in the home and that which is usually bought.

B. Learning Activities:

1. Chart social and emotional environments involving all people and things important to the student and the jobs related.
2. Play "What's My Line?" about community jobs.
3. Charades using community jobs.
4. View filmstrips on community helpers.
5. Spend time in someone else's environment - principal, nurse, janitor, teacher, secretary, librarian noticing differences in environment.
6. From a list of community jobs circle those they might be interested in.

Unit Objective #8: The student will be able to discuss and write environmental experiences.

A. Criterion-Referenced Objectives:

1. The student will be able to list his own environmental experiences in terms of a daily diary.
2. Given a list of the 4 seasons of the year the student will be able to indicate kinds of work he does at home during these times.

B. Learning Activities:

1. Write a daily diary about all the things a child sees and his activities in 24 hour period.
2. Make mobiles of the student and his environment.
 - a. student and his physical environment (surroundings)

6. student and jobs close to him
7. student and people in his environment
3. Cut out pictures of things and discuss whether they are part of the individuals or whether they are part of the individuals or whether they are not part.
4. Make an environment (people or animal) using milk cartons and tooth picks, popsicle sticks and paint.

Unit Objective #9: The student will be able to conduct an interview with an adult.

A. Criterion-Referenced Objective:

1. Given a set of questions the student will conduct an appropriate interview.

B. Learning Activities:

1. Conduct an interview with teachers to obtain a list of home items each did not have as a child. Compare to the students environment.
2. Use interview form to find out:
 - a. What it was like before people had T.V.?
 - b. The most important historical event that has happened in your life time.
 - c. The most important invention that has happened in your life time.
 - d. The most important discovery in your life time.
3. Interview another student about what jobs they did when they were 1 yr. old, 5 yrs. old, 9 yrs. old, and what jobs they could do as an adult.

C. Materials:

1. Dare, Beatrice F. and Edward J., You Are Heredity and Environment, Educational Opportunities Project, Division of Follett Pub. Co., 1965.
2. Teacher-made Personal Information Forms.
3. Filmstrips:

"Community Workers and Helper Group", Singer Education Products, Group I and II.

Randal, Florence, Getting A Job, Pacemaker Books, Feron Pub. Co., Palo Alto, California, 1966.
4. Teacher-made slides.
5. Camera and film.
6. Teacher-made diagrams.
7. Charades for Junior, Selchow and Righter Publishers.
8. Community map.
9. Hangers, tag board, string.
10. Magazines.
11. Milk cartons, paint, popsicle sticks, tooth picks.
12. Menninger, William C. M.D., All About You, Junior Guidance Series, S.R.A.

PERSONAL INFORMATION FORM-A

Mr.
Mrs.
Miss _____ (Last Name) _____ (First) _____ (Middle Initial)

Address _____
Number _____ Street _____
City _____ State _____ Zip Code _____

Telephone # _____

Age: _____

Birthdate _____

Sex: _____

Height: _____ Weight: _____

Hair Color: _____

Eye Color: _____ Blood Type: _____

PERSONAL INFORMATION FORM-B

Mr. _____

Mrs. _____

Miss (Last Name) _____ (First) _____ (Middle Initial) _____

Address _____

Number _____

Street _____

City _____

State _____

Zip Code _____

Place of birth: _____

City _____

State _____

Country _____

School _____

School Phone: _____

Father's name _____

(Last Name) _____

(First) _____

(Middle Initial) _____

Father's Occupation _____

Mother's name _____

(Last Name) _____

(First) _____

(Middle Initial) _____

Mother's job _____

Brothers: _____

Name _____

Age _____

Name _____

Age _____

Name _____

Age _____

Name _____

Age _____

Sisters: _____

Name _____

Age _____

Name _____

Age _____

Name _____

Age _____

Name _____

Age _____

Unit Title: WEATHER

- I. Unit Overview: This unit will enable students to have a better understanding of why weather is an important concern of every one, how they can interpret weather signs, the cause and characteristics of weather phenomena, and how it affects peoples environments.

II. Unit Content Outline:

- A. Who Cares About The Weather
 - 1. farmer
 - 2. fruit grower
 - 3. forest ranger
 - 4. sailer
 - 5. aviator
 - 6. cowboy
 - 7. fisherman
 - 8. trainman
 - 9. outdoor workers
 - 10. sportsmen
 - 11. student
- B. What Everybody Can Learn About the Weather
 - 1. signs
 - 2. wind
 - 3. where does wind come from?
 - 4. watching smoke rise
 - 5. clouds
 - 6. the sunset predicts
 - 7. the rainbow
 - 8. signs we can depend on
- C. What Does the Weather Bring?
 - 1. rain
 - 2. snow
 - 3. extremes
 - 4. lightning and thunder
- D. What is Done About the Weather?
 - 1. The U.S. Weather Bureau
 - 2. Weathermans tools
 - 3. Weather report

III. Unit Description:

Unit Objectives: The student will be able to...

- 1. state orally jobs that are affected by the weather.
- 2. discuss how weather affects certain jobs.
- 3. identify orally and in writing environmental signs indicating weather.
- 4. recite the definition of wind and identify differences in the speed of the wind.
- 5. differentiate the direction that the wind comes from.

6. recite the definition of clouds, and identify different cloud forms and their characteristics.
7. recite the causes of rain, the different kinds of rain, and how to measure rainfall.
8. recite the definition of snow and the characteristics of snowflakes.
9. discuss extremes of weather and in which area they are most likely to occur.
10. compare and contrast the terms lightning and thunder.
11. state "how we find out about the weather today."
12. identify tools and name their uses.
13. recite the functions for the U.S. Weather Bureau.

Unit Objective #1: The student will be able to state orally jobs that are affected by the weather.

- A. Criterion-Referenced Objective:
 1. The student will be able to state five (5) jobs that are affected by the weather.
- B. Learning Activities:
 1. class discussion
 2. play game "Who am I"
 - a. teacher describes role and students name job.
- C. Materials:

(see "material" attached)

Unit Objective #2: The student will be able to discuss how weather affects certain jobs.

- A. Criterion-Referenced Objective:
 1. The student will be able to discuss five (5) jobs and state the affect of weather on these jobs.
- B. Learning Activities:
 1. matching job titles and job descriptions
 2. role playing
 3. putting jobs in alphabetical order
- C. Materials:

(see "material" attachment)

Unit Objective #3: The student will be able to identify orally and in writing environmental signs indicating weather.

- A. Criterion-Referenced Objective:
 1. Given a list of weather signs, the student will be able to classify those indicating good weather and those indicating bad weather.

- B. Learning Activities:
1. look at farmers almanac
 2. outside observation
 3. drawings

- C. Materials:
(see "material" attachment)

Unit Objective #4: The student will be able to recite the definition of wind and identify differences in the speed of wind.

- A. Criterion-Referenced Objectives: The student will be able to...
1. recite the definition of wind.
 2. identify five (5) different wind speeds.

- B. Learning Activities:
1. Looking at pictures and finding their own pictures of wind.
 2. "Why the Wind Blows" experiment. (From More Experiments in Science)

- C. Materials:
(see "materials" attachment)

Unit Objective #5: The student will be able to differentiate the direction that the wind comes from.

- A. Criterion-Referenced Objectives: The student will be able to...
1. name the four (4) directions and relate them to the rising and setting sun.
 2. find due north and determine in what direction the wind is blowing.

- B. Learning Activities:
1. Finding Due North-experiment
 2. Wind Direction-experiment
 3. Wind Speed-experiment

Unit Objective #6: The student will be able to recite the definition of clouds, identify different cloud forms and their characteristics.

- A. Criterion-Referenced Objectives: The student will...
1. be able to orally define clouds.
 2. be able to recognize four (4) different cloud forms.
 3. be able to discuss characteristics of four (4) different cloud forms.

- B. Learning Activities:
1. "Clouds Whenever You Want Them"-experiment (from More Experiments in Science).

2. Make a nephoscope.
3. Use a milk bottle show how clouds are formed.
4. Make different cloud formations with cotton.
5. Match clouds and characteristics of clouds.

C. Materials:
(see material attachment)

Unit Objective #7: The student will be able to recite the causes of rain, the different kinds of rain, and how to measure rainfall.

A. Criterion-Referenced Objectives:

1. The student will be able to explain why it rains and one way to make it rain artificially.
2. The student will be able to orally differentiate between the terms drizzle and down pour.
3. Given the proper materials the student will be able to measure rainfall.

B. Learning Activities:

1. View film "Rain in the City"
2. Make rain gauge
3. Language Experience story
4. A Rainstorm in a Saucepan-experiment (from More Experiments in Science)
5. Do a flannel board story "How a Thunderstorm Grows"

C. Materials:
(see material attachment)

Unit Objective #8: The student will be able to recite the definition of snow and the characteristics of snow flakes.

A. Criterion-Referenced Objectives:

1. The student will be able to recite the definition of snow and discuss what makes it snow.
2. The student will be able to discuss the characteristics of snow flakes.

B. Learning Activities:

1. Experiment "Snow in the Kitchen"
2. Make snow flakes
3. Class discussion

C. Materials:
(see material attachment)

Unit Objective #9: The student will be able to discuss extremes of weather and in which area they are most likely to occur.

A. Criterion-Referenced Objectives:

1. The student will be able to orally discuss the following terms blizzard, ice storms, hail, tornados, dust storms, floods, hurricanes.
2. Given a map the student will be able to locate four (4) areas in which weather extremes occur.

B. Learning Activities:

1. Name hurricanes.
2. Look in newspapers and find stories dealing with weather extremes.
3. Find out where and when the worst of these extremes occurred.
4. Find out what forced a tornado - can exert using a potato and a drinking straw.
5. Interview school staff about their involvement in any weather extreme.

C. Materials

(see material attachment)

Unit Objective #10: The student will be able to compare and contrast the terms lightning and thunder.

A. Criterion-Referenced Objectives: The student will...

1. be able to correctly define orally the terms lightning and thunder.
2. be able to correctly compare and contrast the terms lightning and thunder.

B. Learning Activities:

1. Discuss the lightning safety rules.
2. Discuss the causes of lightning and thunder.
3. Make "Static Electricity"-experiment.
4. Dictate an experience story.

C. Materials:

(see materials attachment)

Unit Objective #11: The student will be able to state how we find out about the weather today.

A. Criterion-Referenced Objective:

1. The student will be able to state three (3) ways in which he can find out about the weather today.

B. Learning Activities:

1. Listen to radio weather report.
2. Listen to T.V. weather report.
3. Read the weather report in newspapers.
4. Call in the Accu-Weather (channel 6) report from the school.
5. Create a skit on a weather report and video tape it.

C. Materials:

(see material attachment)

Unit Objective #12: The student will be able to identify tools and name their uses.

- A. Criterion-Referenced Objective:
 - 1. The student will be able to identify three (3) weathersmen's tools and state their uses given a set of pictures.
- B. Learning Activities:
 - 1. Looking at pictures
 - 2. Chart Temperature on a large scale thermometer
 - 3. Visit the Wilmington Airport Weather Station
- C. Materials:
 - (see material attachment)

Unit Objective #13: The student will be able to recite the function of the U.S. Weather Bureau.

- A. Criterion-Referenced Objective:
 - 1. The student will be able to recite one purpose for the U.S. Weather Bureau.
- B. Learning Activities:
 - 1. Write a letter to the U.S. Weather Bureau requesting information.
 - 2. Look at weather maps
 - 3. Send up balloons with self-addressed stamped post cards, asking for weather information
- C. Materials:
 - (see material on attached sheet)

Materials

1. Adler, Irving , Weather In Your Life, The John Day Co., New York; 1959.
2. Spilhaus, Athelstan, Weathercraft, The Viking Press, New York; 1967.
3. Barr, George, Research Adventures For Young Scientists, McGraw-Hill Book Co., 1964.
4. Bradely, Duane, Our World of Science, J.B. Lippincott Co., 1959.
5. Zim, Herbert, Lightning and Thunder, William Morrow and Co., 1959.
6. Tannedill, Ivan. All About The Weather, Random House, New York; 1953.
7. Beeler, Nelson F., More Experiments in Science, Thomas Y. Crowell Co., 1950.
8. Beeler, Nelson F., Experiments in Science, Thomas Y. Crowell Co., 1955.
9. Schneider, Herman., Everyday Weather, McGraw-Hill Book Co., 1961.
10. Gallant, Roy., Exploring the Weather, Doubleday and Co., 1969.
11. Gaer, Joseph, Everybody's Weather, Lippincott Co., New York, 1965.
12. Farmers Almanac
13. Magazines
14. Pictures of wind
15. Film - "Rain in the City"
16. Cotton balls
17. paper
18. newspaper
19. post cards, ballons
20. E.B.F. FILMSTRIPS - Plant Life
21. Film Loop - Mountain Storm
22. Elementary Social Studies - How Climate Affects Our Lives.

EVALUATION

For an evaluation of the weather unit, the student will check off the activities he has completed. The teacher will review each check sheet weekly.

<u>ACTIVITIES</u>	<u>COMPLETED</u>	<u>DATE</u>
Game "Who am I?"		
Match job titles and descriptions		
Role playing		
Put jobs in ABC order		
Read Farmer's Almanac		
Outside observation		
Make Drawings		
Cutting out pictures of wind		
Experiment "Why the Wind Blows"		
Experiment "Finding Due North"		
Experiment "Wind Direction"		
Experiment "Wind Speed"		
Experiment "Clouds When You Want Them"		
Make a Nephoscope		
Experiment "Milk Bottle Clouds"		
Make different cloud formations		
Match clouds and characteristics		
See film "Rain in the City"		
Make rain gauge		
Language-Experience Story		
"Rainstorm in a Saucepan" - Experiment		

EVALUATION (CON'T)

ACTIVITIES	COMPLETED	DATE
Experiment "Snow in the Kitchen"		
Make paper snowflakes		
List of hurricanes		
Interview		
Experiment "Static Electricity"		
Experience Story		
Read weather report in newspapers		
Call Action News		
Chart temperature		
Field trip		
Business letter to Weather Bureau		
Balloon experiment		

Unit Title: PLANTS

I. Unit Overview: This unit will be a study of plants. It will include clear and simple explanations of seeds, roots and bulbs. Children will learn to appreciate the valuable role that every plant plays in the world of living things.

II. Unit Content Outline:

- A. Living and Growing
 - 1. Where plants grow and their behavior
 - 2. Why plants are important
 - 3. How plants are built
- B. Roots
 - 1. How roots are built
 - 2. Plant-pipelines
 - 3. Which roots we eat
- C. Seeds
 - 1. How seeds are built
 - 2. How seeds grow
 - 3. Which seeds we eat
- D. Bulbs
 - 1. How bulbs are built
 - 2. How bulbs grow
 - 3. Which bulbs do we eat
- E. Gardening
 - 1. Plan a garden
 - 2. Plant a garden
 - 3. Harvest a garden
- F. Vegetables
 - 1. Plants we eat
 - 2. Vegetables Year Round
 - 3. Why eat vegetables

III. Unit Objectives: The student will be able to...

- 1. orally discuss where plants grow.
- 2. orally discuss the behavior of plants.
- 3. state why plants are important to all other living things.
- 4. orally describe how plants are constructed.
- 5. orally discuss how a plant grows.
- 6. orally discuss how roots are constructed.
- 7. state functions of the root system.
- 8. describe plant pipelines and their function.
- 9. list edible roots.
- 10. describe how seeds are formed.
- 11. orally discuss how seeds are constructed.
- 12. discuss how seeds grow and travel.
- 13. list edible seeds.

14. orally describe how a bulb is built.
15. orally describe how bulbs grow.
16. draw a garden plan.
17. choose the vegetables to plant.
18. identify garden tools.
19. plant correctly.
20. discuss vegetables we eat and why we eat them.
21. orally discuss the processes involved in keeping vegetables on our plate all year round.
22. care for the garden.
23. harvest correctly.

IV. Unit Description:

Unit Objective #1: The student will be able to orally discuss where plants grow.

A. Criterion-Referenced Objective:

1. The student will be able to orally list five (5) places where plants grow.

B. Learning Activities:

1. Grow a part of a carrot in water.
2. Grow a sweet potato in water.
3. Grow an air fern.
4. Grow an air plant from a leaf.
5. Grow grass on a sponge.
6. Grow a plant in soil.
7. Make a garbage garden.

Unit Objective #2: The student will be able to orally discuss the behavior of plants.

A. Criterion-Referenced Objective:

1. The student will be able to orally discuss three (3) reasons why plants move.

B. Learning Activities:

1. The effect of light on plants
2. Look at a picture and then feed a venus-fly trap.
3. Measure growth of plants.
4. Experiment with vines and plants to show paristic relationships.

Unit Objective #3: The student will be able to state why plants are important to all other living things.

A. Criterion-Referenced Objective:

1. Given a diagram the student will be able to explain photosynthesis.
2. Given a diagram the student will be able to explain respiration.
3. The student will be able to list three (3) ways in which plants are important.

B. Learning Activities:

1. Experiment with leaf and alcohol showing the presence of chlorophyll.
2. Experiment with green leaf giving off oxygen.
3. Experiment showing green leaf giving off water vapors.
4. Make dyes from plants.
5. Make terrariums.
6. Circle plants on the monthly menu.
7. Discuss pictures of soil erosion.

Unit Objective #4: The student will be able to orally describe how plants are constructed.

A. Criterion-Referenced Objective:

1. The student will be able to list five (5) parts of the plant.

B. Learning Activities:

1. Label them on a diagram.
2. Color the parts.
3. Play "feeley-meeley" with plant parts using bean seeds, corn seeds, maple leaf, apple leaf, carrot root, radish root and twig.

Unit Objective #5: The student will be able to orally discuss how a plant grows.

A. Criterion-Referenced Objective:

1. The student will be able to orally discuss how a plant grows.
2. The student will be able to list three (3) basic needs of a plant.

B. Learning Activities:

1. Experiment with radish seeds, panes of glass, and water showing that stems grow up and roots grow down.
2. Experiment showing effect of gravity on plants using sprouted seed, damp cotton, bottle and cork.
3. Experiment with bean plants varying light, water, air, bean, temperature.
4. Contact Mrs. Derrickson for visit and field trip.
5. List plants alphabetically.

Unit Objective #6: The student will be able to orally discuss how roots are constructed.

A. Criterion-Referenced Objective:

1. Given a diagram the student will be able to label parts of a root.

B. Learning Activities:

1. Label root parts.
2. Examine root systems under a microscope.

Unit Objective #7: The student will be able to state functions of the root system.

A. Criterion-Referenced Objective:

1. Given the parts of a root the student will be able to orally explain each of its functions.

B. Learning Activities:

1. Experiment showing how roots grow towards water using flat wooden box, soil, pots, cork, wax, water, screen, peat moss, bean seeds.
2. Examine plants grown in water.
3. Examine radish root hairs using seeds, pot, cooking pot.

Unit Objective #8: The student will be able to describe plant pipelines and their function.

A. Criterion-Referenced Objective:

1. The student will be able to discuss orally the process by which water gets from the root to the leaves.

B. Learning Activities:

1. Place a carrot in colored water.
2. Place a stick of celery in colored water.
3. Using a carnation, show how the stem carries water up to the petals.

Unit Objective #9: The student will be able to list edible roots.

A. Criterion-Referenced Objective:

1. The student will be able to list three edible roots.

B. Learning Activities:

1. Discuss how the food is formed.
2. Plant radishes and pull them up every week to see the change.
3. Draw roots we eat.

Unit Objective #10: The student will be able to describe how seeds are formed.

A. Criterion-Referenced Objectives:

1. Given a diagram of a flower the student will be able to describe how seeds are formed.
2. The student will be able to describe the terms "self-pollination" and "cross-pollination".

B. Learning Activities:

1. Play bingo with terms "pistil", "stamen", "ovary", "seeds", "self-pollination", "cross-pollination", etc.
2. Label and color a diagram.
3. Look at prepared slides of flower parts.
4. Make a model of a simple flower using clay, colored paper, and toothpicks.

Unit Objective #11: The student will be able to orally discuss how seeds are constructed.

A. Criterion-Referenced Objective:

1. The student will be able to list four (4) parts of the seed.

B. Learning Activities:

1. Copy a diagram of a seed from the board and label the parts.
2. Examine a seed under a magnifying glass.
3. Match seeds to outside covers cherry-skin, corn-husk, peas-pods, rind-lemon, banana-peel, nut-shell, grain-hull.
4. Examine different colors, sizes, and shapes of seeds.
5. Find out how many seeds there are in an apple, cantalope, etc.

Unit Objective #12: The student will be able to discuss how seeds grow and travel.

A. Criterion-Referenced Objectives:

1. The student will be able to list four (4) ways in which seeds travel.
2. Given appropriate materials, the student will be able to list three (3) needs of a seed for germination.
3. The student will be able to state the definition for the term "sprout".

B. Learning Activities:

12-A

1. class discussion
2. collect seeds with wings in the fall-elm, maple, pine, ash.
3. experiment to see how much wings help seeds.
4. collect cups of mud and see if any plants grow.
5. make a diagram showing how seeds travel.

12-B

1. experiment with sunflower seeds, water, and pan showing how seeds absorb water.
2. experiment with bean seeds and glass beakers showing how seeds expand.
3. experiment with pea seeds, water, and two (2) jars with top showing that seeds cannot germinate without water.
4. experiment with baking powder showing that water starts some chemical acting.
5. experiment with three (3) food cartons, soil, 18 dry beans to find out if cotyledons (food) help baby bean plants.

12-B

6. experiment with parakeet seeds and radish seeds showing effect of temperature.
7. experiment with sugar, paper towels, glass covers, and embryo (baby plants) to show the importance of cotyledons (food).
8. experiment with iodine and peas showing the content of starch and how the plant uses it.
9. experiment with ten (10) egg shells, egg carton, bean seeds digging them up every 2 or 3 days to examine roots, root hairs, new plant (sprout) leaves, stem.

Unit Objective #13: The student will be able to list five (5) edible seeds.

A. Criterion-Referenced Objective:

1. The student will be able to list five (5) edible seeds.
2. The student will be able to list three (3) ways in which seeds are useful.

B. Learning Activities:

1. Different seeds, nuts, popcorn, cocoa, peas, corn, sunflower seeds, oatmeal, pepper corn, mustard seed.
2. Make a mounted collection of seeds.
3. List cotton seed products.
4. List peanut seed products.
5. Make peanut butter.
6. List flax seed products.
7. List Castor-Bean seeds.
8. List soybean seed products.
9. Make poppy seed bread.

Unit Objective #14: The student will be able to orally describe how a bulb is built.

A. Criterion-Referenced Objective:

1. The student will be able to list the three (3) parts of a bulb.

B. Learning Activities:

1. Examine an onion with a magnifying glass.
2. Copy a bulb diagram from the board and label parts.
3. Dig up a bulb that had been planted in the fall.

Unit Objective #15: The student will be able to orally describe

A. Criterion-Referenced Objective:

1. The student will be able to list the three (3) needs of a bulb which are six (6) hours of sun a day, good soil and an area where they won't be disturbed.

B. Learning Activities:

1. Go over the proper planting procedure.
2. Plant early bulbs and late bulbs in the fall.
3. In the spring after the bulbs have bloomed, cut off withered blossoms but let the leaves alone.
4. Plant onions and cut down through the middle of the bulb when the tops are 4" high.
5. Grow paper-white narcissus bulbs in water.

Unit Objective #16: The student will be able to draw a garden plan.

A. Criterion-Referenced Objective:

1. Given brown paper and ruler, the student will be able to make a drawing of a garden.

B. Learning Activities: The student will...

1. be assigned to a group of four other students and prepare brown paper so that it measures 5' x 5'.
2. have 12' x 12' area plowed.
3. mark off four (4) plots (5' x 5') and two (2) foot walk ways running the length and width of the garden.
4. test the soil to determine fertilizer needs.

Unit Objective #17: The student will be able to choose the vegetables to plant.

A. Criterion-Referenced Objective: #17-A

1. Given a choice of early vegetables each group of students will be able to pick five (5) vegetables to plant in their plots.

B. Learning Activities:

1. Look over seed catalogues and list early vegetables i.e., lettuce, onions, peas, radishes, broccoli plants, cabbage plants, garden cress, spinach, and beets.
2. Bring in seed packets and read directions.
3. All this time the students are working the soil, getting ready to plant.

A. Criterion-Referenced Objective: #17-B

1. Given the drawing of the garden the student will be able to plan the arrangement of his vegetables.

B. Learning Activities: The student will...

1. write the name of the vegetables on the diagram and correctly space the rows on the brown paper.
2. take the paper outside and place it on the garden.
3. with sticks and string, mark the rows and label the sticks.
4. walk to the shopping center and buy the seeds.

Unit Objective #18: The student will be able to identify garden tools.

A. Criterion-Referenced Objective:

1. Given a set of pictures the student will be able to identify seven (7) garden tools and state their uses.

B. Learning Activities:

1. Play concentration with pictures and terms.
2. Match correct term to picture of tools.
3. Bring in garden tools.
4. Use tools correctly in the garden.

Unit Objective #19: The student will be able to plant correctly.

A. Criterion-Referenced Objective:

1. Given proper tools, directions and seeds the student will be able to plant correctly.

B. Learning Activities:

1. Practice making furrows of different depth.
2. Go over the directions for holding seeds and putting them in the ground.
3. Discuss the directions for transplanting plants.
4. Class discussion about hot tops and how they protect plants against frost, rain, wind, and insects.
5. Make furrows, put in seeds and cover them. Check to see that rows are labeled correctly.
6. Fertilize rows.
7. Visit a greenhouse.
8. Visit a high school agriculture department.
9. Visit a farm.
10. View a filmstrip on farming in the U.S.
11. Flannel board activities.

C. Materials:

1. S.V.E. Educational Filmstrips, Singer
 - a. The South - Agriculture, Rev.
 - b. The Middle West
2. Six Families in the U.S., The Pattersons Live on a Farm.
3. Soil: Its Meaning for Man

Unit Objective #20: The student will be able to discuss vegetables we eat and why we eat them.

A. Criterion-Referenced Objective: #20-A

The student will be able to list five (5) vegetables we eat.

B. Learning Activities:

1. Make a collage of pictures of vegetables.
2. Play vegetable riddles. I have ears but cannot hear (corn).
3. Unscramble vegetable names.
4. Draw your favorite vegetable.
5. Match the beginning letter of the name with a vegetable - Kathy Kale.
6. Bingo with vegetable names.

- A. Criterion-Referenced Objective: #20-B
1. The student will be able to list five (5) parts of plants we can eat and cite examples.
- B. Learning Activities:
1. Classify vegetables according to the parts of the plant they come from - roots, stems, leaves, flowers, and fruits.
 2. Following directions game dividing students into groups names after the five (5) plant parts.
 3. Play password with vegetable names.
 4. Invent a new vegetable and draw it.

- A. Criterion-Referenced Objective: #20-C
1. The student will be able to list four (4) reasons for eating vegetables.

- B. Learning Activities:
1. Write skits for pre-school about types of vegetables and why we eat them. (and present skits)
 2. Making posters for the cafeteria listing reasons for eating vegetables.
 3. Interview cafeteria manager to ask about menu planning.
 4. Keep a vegetable diary for a week.

Unit Objective #21: The student will be able to orally discuss the processes involved in keeping vegetables on our plate all year round.

- A. Criterion-Referenced Objective: #21-A
1. The student will be able to list three (3) ways in which vegetables are preserved.

- B. Learning Activities:
1. discuss process of dehydration and make mashed potatoes from flakes.
 2. discuss canning process and have a canning demonstration.
 3. discuss freezing procedures and view films on freezing.

- A. Criterion-Referenced Objective: #21-B
1. The student will be able to list four (4) ways in which vegetables are shipped.

- B. Learning Activities:
1. view films on transportation
 2. map the route and types of transportation vegetable producers might use from California to Newark.
 3. Draw means of transportation.
 4. Discuss why vegetables need to be shipped.

A. Criterion-Referenced Objective: #21-C

1. The student will be able to discuss proper storage techniques for fresh and preserved vegetables.

B. Learning Activities:

1. discuss where and how root vegetables and tubers are stored.
2. discuss where and how dehydrated, canned and frozen foods are stored to prevent spoilage.

Unit Objective #22: The student will be able to care for the garden.

A. Criterion-Referenced Objective #22-A

1. The student will be able to follow the directions for thinning the rows.

B. Learning Activities:

1. Read seed packet directions for thinning.
2. Thin the garden.

A. Criterion-Referenced Objective #22-B

1. The student will be able to discuss orally the term "pesticides" and list its advantages and disadvantages.

B. Learning Activities:

1. View filmstrip on pesticides.
2. discuss other alternatives to pesticides.

A. Criterion-Referenced Objective #22-C

1. The student will be able to list four (4) ways to increase productivity in the garden.

B. Learning Activities:

1. discuss watering, pinching back, cultivating, staking up and weeding.
2. work in the garden
3. view slides on gardens.

Unit Objective #23: The student will be able to harvest correctly.

A. Criterion-Referenced Objective:

1. The student will be able to harvest his garden correctly.

B. Learning Activities:

1. read the directions on the package.
2. discussion about the size the individual vegetables should be when picked.
3. plot on a calendar the approximate times the vegetables should be ready.
4. carefully observe the vegetables and pick when ready.
5. fix salads and hot dishes with the vegetables.

POST TEST

I. Circle the places where plants can grow.

soil
table

water
air

log
sun

II. Using the five terms, label the diagram.



root hairs
flowers
stems
roots
leaves

III. Circle the things that seeds need to grow.

rocks

water

air

light

soil

temperature

IV. Write the letter of the correct answer in the blank space.

(1) Onions are a _____.
(a) flower (b) bulb (c) leaf

(2) Seeds are made in the _____.
(a) leaf (b) ground (c) flower

(3) Embryos get their food from _____.
(a) the water (b) the seed (c) the air

V. Put "T" in front of the true statements. Put an "F" in front of the false statement.

_____ (1) Some bulbs you can eat.

_____ (2) Peanut butter is made from a seed.

_____ (3) Seeds need light to germinate.

_____ (4) Roots use sunlight to grow.

_____ (5) Vegetables are good for us.

MATERIALS

1. Variety of plants, seeds, and bulbs
2. Basic science equipment
3. Garden tools and fertilizer
4. Resource people
5. Teacher-made materials
6. Planting pots and soil
7. Prepared slides
8. Art supplies (ex. clay, colored, paper)
9. Supplies needed for experiments
10. Filmstrips and movies
11. Seed catalogues
12. Hot Kaps
13. Maps
14. Jordan, Helene J. How a Seed Grows, Thomas Y. Crowell Co., 1960.
15. Kirkus, Virginia, The First Book of Gardening, Franklin Watts, Inc., 1956.
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17. Peeler, Nelson F. and Branley, Franklin M., More Experiments in Science, Thomas Y. Crowell Company, 1950.
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20. Hutchins, Ross E., Strange Plants and Their Ways, Rand McNally Company, 1958.
21. Dickinson, Alice., The First Book of Plants, Franklin Watts Company, 1953.
22. Foster, Willene K. and Oueree, Pearl. , Seeds are Wonderful, Melmont Publishers, Inc., 1960.
23. Hammond, Winifred, The Riddle of a Seed, Howard - McCann Inc., New York, 1965.
24. Allee, Veva, The Vegetables on Your Plate, Melmont Publishers, Chicago, 1960.
25. Selsam, Millicent, Play With Plants, William Morrow and Co., New York, 1949.
26. Hutchins, Ross, The Amazing Seeds, Dodd, Mead and Co., New York, 1965.
27. Selsam, Millicent, Play with Seeds, William Morrow and Co., New York, 1957.

I. Unit Title: ECOLOGY IN ACTION

II. Unit Overview: Ecology is the study of all the interactions of plants and animals with each other and with their physical environment. Now that man has decided to improve his environment, people must be found with the knowledge to solve the problems. Career opportunities for many thousands of young people are now opening every day. This unit is designed to investigate the man-made causes of ecological problems and give the student an opportunity to see how the problems are being approached by private citizens and professionals in the field.

III. Unit Objectives:

1. Given observational opportunities, the student will be able to list, identify or verbalize man-made causes of environmental pollution.
 2. Given observational opportunities, the student will be able to identify specific pollutants.
 3. The student will be able to determine the effects of man's present and past actions that have brought about the environmental conditions endangering the health and welfare of all living species.
 4. The student will be able to compare the role of the individual citizen in discovering solutions to environmental problems.
 5. Given a list of occupations, the student will be able to select those careers that are directly involved with ecology.
- A. Criterion-Referenced Objectives: The student will...
1. (a) be able to make a diagram of the water cycle for his folder after discussion of the water cycle in class.
 1. (b) write a creative paper on water or air pollution or any other pollution problem of interest. Use of the student's imagination in thinking and writing will be emphasized.
 1. (c) study prepared slides of four (4) different air pollutants.
 2. (a) collect samples of polluted water, make observation data worksheets, observe samples of polluted water under a microscope and take pH tests of polluted samples of water and drinking water.
 2. (b) make pollutant collectors to test air in and around school. The student will check collectors after one week and identify any visible particles.
 2. (c) check the exhaust of different makes and models of cars and compare results, by placing a filter over the tailpipe and then running the motor.
 3. (a) visit the Red Clay Creek at three (3) or four (4) different locations to determine water quality and effects of pollution.

3. (b) organize a scrap book on world, national and local environmental problems.
4. (a) visit the local water plant or facility to view measures taken to make local water drinkable. The student will be able to discuss observations.
4. (b) take part in an assembly line production of plastic litter bags.
4. (c) compile a list of things that can be done by the public to help resolve the environmental crisis.
4. (d) plant trees or shrubbery on school land or nearby playgrounds.
5. (a) research in the library two (2) occupations dealing with water or marine life, and make a short report to the class.
5. (b) write to a local planner or landscape architect to arrange for a talk to the class on the problems of a growing community, conserving natural resources, or local transportation problems.
5. (c) Prepare a list of at least five (5) careers or occupations in the ecological or environmental field with short job descriptions, qualifications, duties, and prospect for employment and advancement.

B. Learning Activities:

2. (b) In testing for air pollutants, obtain and weigh a peice of filter paper. Secure the filter paper over the opening of a vacuum hose which draws in volumes of air. Draw air through the filter paper for 5 minutes. Weigh the filter paper again. Note any increase in weight or change in color of the paper. Use a magnifying glass to note the different sizes, colors, and shapes of particles collected on the filter paper. Repeat this activity in different kinds of weather. Compare the cleanliness of the air during clear weather and shortly after a rain or snow.

C. Materials:

5. (c) Contact an official from the State Dept. of Nat'l Resources and Environmental Control to discuss the state's role in environmental control including services and employment opportunities.

Excellent sources of information include: "Career World", Curriculum Innovations, Inc., Highwood Ill., Vol #2 and #3, Nov., 1973. "Exploring Occupations in the Natural Resources", Dept. of Agricultural Education, Penn State University, 1973.

Unit Title: OCEANOGRAPHY

- I. Unit Overview: This unit deals with the scientific study of the oceans, their physical boundaries, their contents and the natural forces effecting them. Delaware's geography makes such study extremely relevant. Expansion to include all tidal and water areas can be embodied in this area of interest. Students will become aware of the many and varied types of marine careers from the semi-skilled jobs available in the Merchant Marines to those that utilize practically all scientific discipline.

II. Unit Content Outline:

- A. Oceanography and Related Careers
- B. Chemical, Biological and Chemical Aspects
- C. Natural Forces
- D. Topography and Geography
- E. Natural Resources
- F. Oceanic Pollution

Oceanography and Related Careers

- A. Oceanographers
 - 1. Biological
 - a. Biology
 - 1. Flora
 - 2. Fauna
 - 3. Energy or Food Chains
 - 4. Life Cycles
 - b. Pollution
 - 1. Effects on Bays, Rivers, Oceans in vicinity of Delaware
 - c. Natural Resources
 - 1. Food
 - 2. Water
 - 3. Minerals
 - 4. Oxygen
 - 2. Chemical
 - a. Chemical Aspects
 - 1. Materials
 - b. Pollution
 - 1. Effects on Bays, Rivers, Oceans in the vicinity of Delaware
 - 3. Physical
 - a. Physical Aspects
 - 1. Wave Action
 - 2. Erosion
 - 3. Currents
 - 4. Temperatures
 - b. Pollution
 - 1. Effects on Bays, Rivers, Oceans in vicinity of Delaware

4. Geological
 - a. Topography
 1. Trenches
 2. Shelves
 3. Mountains
5. Engineer
6. Technician
 - a. Scuba
 - b. Breed Raise Fish
7. c. Lab technician
- d. Navigate
7. Meteorologist
 - a. Natural Forces
 1. Storms
 2. Tides
 3. Winds
 4. Climatic Zones
8. Mathematician
 - a. Process observations and measurements
9. Archaeologist
10. Lawyer

III. Unit Objectives:

1. Investigate and describe the life cycle of a sea animal other than fish or mammal.
2. Identify a selected group of sea animals from shells and/or skeletons.
3. Gather data to devise an experiment to demonstrate that cold water is heavier than warm or hot water.
4. Using obtained data devise an experiment to show that salt water is heavier/lighter than...
5. Show evidence of ability to recognize and identify major land and water bodies of the world.
6. Demonstrate how to locate a point on the world's surface using grid system.
7. Construct a model of ocean floor section.
8. Integrate appropriate careers into selected activities.
9. Investigate the ocean and tidal areas as a source of food, fresh water, and minerals.

A. Criterion-Referenced Objectives:

1. Identify sea animals -- 15 or 20
2. Demonstrate research skills
3. Communicate reasons and ideas
4. Show organization of data
5. Demonstrate ability to locate a point on earth's surface using intersecting lines of longitude and latitude.
6. Show ability to use obtained data to construct a two (2) or three (3) dimension model.
7. Gather career data in an area of interest to include preparation, physical requirements, employment possibilities, prospective income, likes and dislikes.

B. Learning Activities:

1. Research
2. Differentiate
3. Communicate
4. Synthesize
5. Identifying variables
6. Organization of data for use in proving a point
7. Demonstration
8. Apparatus manipulation
9. Locating points on a globe or map
10. Gather and organize reference material to successfully complete objectives of a project.

C. Materials:

1. Encyclopedia, selected reference charts and books
2. Collection of shells and skeletons
3. Essential lab materials to perform experiments
4. World Atlas, place maps, globes
5. Sea life - Filmstrips and cassettes, National Geographic
6. Small Worlds of Life - Filmstrips and cassettes, National Geographic
7. Occupational Guidance Handbook
8. Finding Your Job Handbook
9. Desk Top Career Kit
10. SRA Occupational Briefs
11. ARCO - Rosen Career Guidance Series
12. Newspapers and magazines

Unit Title: PRINCIPLES OF FLIGHT

I. Unit Overview: To develop sufficient knowledge of aircraft structure, controls, and propulsion, and to be reasonably informed on principles of flight.

II. Unit Content Outline:

- A. Aircraft classification by flight principle
- B. Structure of the aircraft
- C. Forces acting on the airplane
- D. Function of the controls
- E. Aircraft Engines

III. Unit Objectives: The students will be able to...

- 1. Demonstrate the forces acting on aircraft in flight.
 - 2. Explain the meaning of force, energy, and power.
 - 3. Explain the major principle involved in aircraft professionalism.
 - 4. Explain function of the controls and their relationship to aircraft performance.
 - 5. Explain the relationship of scientific principle to the various types of aircraft design.
- A. Criterion-Referenced Objectives: The students will...
- 1. be able to identify from a set of conditions and/or model, the force acting on an object in flight.
 - 2. be able to match pictures with the major principles involved in aircraft propulsion.
 - 3. be able to demonstrate by using a model the function of the controls to the orientation of the aircraft in flight.
 - 4. be able to explain (written or orally) the various scientific principles involved in different types of aircraft.
- B. Learning Activities:
- 1. Construct a wind tunnel and wing sections of different shapes.
 - 2. Explain and demonstrate the principles involved in throwing a curve ball.
 - 3. Determine several ways in which you could demonstrate Newton's third law of motion.
 - 4. Demonstrate the principle of a rocket through the use of carbon dioxide cartridges in model planes, boats and cars.
 - 5. Demonstrate the effect of drag on various shaped bodies.
 - 6. Make a model of a type of reaction rocket.

7. Make a list of terms used in naming the parts of a plane; define the terms.
8. Identify parts of a plane according to function; describe the function.
9. Collect and exhibit plant seeds that "fly". Explain the science principle that is involved.
10. Collect and exhibit pictures of model planes and slides.
11. Make a model of a jet and a reciprocating engine. Explain their operations to the class.
12. Make a scrapbook on a phase of aviation.
13. Make a poster or a model to explain the four stroke engine.

Unit Title: DAYS WITH PLANTS

- I. Unit Overview: This unit is designed to develop a more comprehensive understanding of plant varieties, how they grow, reproduce and how they are cared for. A knowledge of career opportunities open for those interested is integrated with learning activities.

II. Unit Objectives:

1. Identify career opportunities open to those interested in care, propagation, research and marketing of plants.
2. Compare and differentiate a variety of house and garden plants.
3. Manipulation of materials to grow some variety of plant life.
4. Construct a rate of growth graph using two (2) variables. Examples: Height-time, Height-water or no water.
5. Investigate the principal plant parts, their functions and variety.
6. Interview someone (parent, relative, business person) about a career you may be interested in or some facet of plant life.
7. Use gardening tools as available to perform garden tasks.
8. Prepare a scrapbook from magazines and newspaper on some kind or kinds of plant life.

A. Criterion-Referenced Objectives:

1. Data gathering for two (2) appealing careers.
2. Research and report on five (5) different groups of house and garden plants. List what you think are the most important characteristics of each group.
3. Prepare a suitable environment for plant propagation.
4. Grow a plant successfully without seeds.
5. Plot a graph using two (2) variables.
6. Demonstrate use of metric measuring.
7. Examine and identify all basic plant parts.
8. Classify variations of the same structures in different species of plants.
9. Make drawings or sketches of plant parts.
10. Demonstrate proper use of garden tools to perform a given job safely and with evidence of a plan.
11. Classify and present in scrapbook form a plant group. Example: Cone-bearers, flowers, monocotyledons.

B. Learning Activities:

1. Research
2. Differentiation of plants
3. Organizing data obtained
4. Selecting pertinent information
5. Soil preparation
6. Successful propagation of plants without using seeds

7. Compiling data obtained by measuring and demonstrating use of some metric units.
8. Drawing or sketching
9. Verbal communication to obtain information
10. Tool Manipulation
11. Demonstrate safety procedures
12. Collecting and classifying pictures
13. Demonstrate use of outside resources
14. Field Trips

C. Materials:

1. Time-life Encyclopedia of Gardening
2. Seeds
3. Plants
4. Metric rulers
5. Graph paper
6. Seed plants kit Lib. #179 Filmstrips and Cassettes
7. World Book Encyclopedia
8. Occupational Guidance - Handbook
9. Finding Your Job - Handbook
10. Desk Top Career Kit
11. SRA Occupational Briefs
12. ARCO - Rosen Career Guidance Series
13. Newspapers and Magazines.
14. Garden tools (non-powered)
15. Filmstrip #7 Do You Like Flowers
16. Outdoor Lab

Unit Title : LIFE CONSERVATION

- I. Unit Overview: Public interest in wildlife and conservation have increased dramatically in the past few years. This unit of study is designed to help students better understand our natural resources in the wildlife area and to become more aware of the people who are employed in this work.

II. Unit Objectives: The student will be able to...

1. State a definition or explanation of conservation and develop a basic understanding of wildlife terms.
2. Identify species of wildlife that are endangered, nearing extinction, and a few that have become extinct.
3. Demonstrate examples of the "Balance of Nature" or "The Web of Life".
4. Explore the community and our state to determine the kinds of wildlife we have in our midst.
5. Describe some of the migration patterns and habits of wildlife.
6. Recall some knowledge of Delaware fish and game laws.
7. Show what the individual can do for wildlife today.
8. Name and describe various careers available in conservation of fish and wildlife.

A. Criterion-Referenced Objectives:

1. a) Using sources such as encyclopedias, dictionaries, science books and wildlife publications the student will be able to define orally or in writing at least ten (10) conservation and wildlife terms.
2. a) Using current state and national publications, the student will write a report and present the findings to the class on an endangered species of wildlife. The student will write the name of the article and publication, the author and date of issue at the end of the report.
2. b) The student will construct a wildlife game or puzzle to make the class aware of some of our endangered species. Examples would be crossword puzzles, wildlife bingo, missing letter games, etc.
3. a) The student will construct a poster or transparency of the "Balance of Nature" or "The Web of Life" after viewing filmstrip on the subject.
4. a) Using state and national publications the student will report on the wildlife native to the local area. Select 2 mammals, birds, and fish, obtain a picture of each, describe its natural food, describe its typical shelter, and become acquainted with local or federal laws concerning season, limits, and other requirements for harvesting and control.

SOCIAL STUDIES

Unit Title: A MEANS FOR SATISFYING HUMAN WANTS

- I. Unit Overview: This introductory unit intended to assist students in building a framework of ideas which can be useful in organizing their thoughts about economic life. Students will be asked to think in terms of a given pattern of human behavior while considering, in a general way, various human wants and the means some people have developed to attempt to satisfy those wants.

II. Unit Content Outline:

The modified market economy

1. A general description
2. Recognizing and identifying its basic elements
3. Identifying and labeling selected types of human activity according their places in the general description
4. Giving previously unencountered types of human activity and placing them in the overall picture.
5. Recognizing selected terms
6. Utilizing selected terms to describe human economic activity as related to the general description above.

III. Unit Objectives: The student will...

1. identify each of a number of elements in a given outline of a modified market economy.
2. correctly identify examples and non-examples of elements of a modified market economy in his own life and in the lives of others in selected times and places.
3. list new examples of selected elements of a modified market economy (examples not previously encountered in this unit).
4. correctly and briefly define, orally and/or in writing, selected terms used in the unit description of a modified market economy.
5. correctly use certain previously given terms to describe a modified market economy.

IV. Unit Description:

Unit Objective #1: The student will correctly identify each of a number of elements in a previously studied outline of a modified market economy.

A. Criterion-Referenced Objective:

1. Given a set of statements, each of which describes one of a number of elements of a modified market economy, and given a list of names of such elements, the student will correctly match the name of each element with its description. Eighty percent correct will be considered satisfactory.

B. Learning Activities:

1. Each student reads a teacher-prepared simplified description of the relationship among certain elements of a modified market economy and studies a list of terms and their definitions provided by the teacher.
2. Class discusses written description and list of definitions given in Activity #1.
3. Class divides into small groups. Each group, with assistance as needed from the instructor, designs and makes a chart illustrating the relationships in the written description in Activity #1.
4. Each group shows its chart to the class and explains what the chart tells.
5. The charts are posted for reference.
6. Without reference to the list of definitions provided in Activity #1, the class prepares a set of definitions to match the terms on the Activity #1 list. The terms will be presented, one at a time, to the class, by the teacher, who will assist the class in recording their ideas.
7. The class compares the definitions they have prepared with the definitions provided in Activity #1.
8. Given a printed mixed list of ten (10) of the terms and definitions used in Activity #1, each student will indicate in writing which terms match which definitions.
9. Students check their papers from Activity #8. Those who correctly match eight (8) or more terms and definitions are to do another similar written matching exercise containing the remaining 15 terms and their definitions.
10. Students who did not correctly match eight (8) terms and definitions in Activity #8 are given five (5) terms and definitions each. All 25 terms from Activity #1 are to be included on these lists. Students try, on each sheet, to match the five (5) terms provided with the five (5) definitions provided.
11. Students who successfully complete Activity #10, next repeat Activities #8 and #9.

Unit Objective #2: The student will identify examples and non-examples of elements of a modified market economy in his own life and in the lives of the others in selected times and places.

A. Criterion-Referenced Objectives:

1. Shown a series of pictures of people involved in various types of human activity, the student will correctly identify, in each objects and actions which are examples of or show evidence of elements of a modified market economy. The student should explain briefly how the objects and actions observed are related to the elements of which they are examples.

2. Given a mixed list of examples and non-examples of selected concepts from economics, the student will correctly distinguish the examples of each concept from the non-examples and will briefly explain the reasons for his choices. Eighty percent correct will be considered satisfactory.
3. Given a list of selected concepts, the student will write a paragraph in which he includes examples of at least five (5) of the concepts.

B. Learning Activities:

1. Preparatory Practice:
Each student lists things he or she feels are the most important in his life. Then he groups those things he has listed which have some relationship with each other, possibly placing some things in more than one group. He next tries to label each group with a single term.
2. The class is shown a set of pictures of people engaged in different kinds of activities. They observe the pictures and list the names of things they see. Then they group and label the things in the same manner as in Activity #1.
3. The class is shown another set of pictures of people doing a variety of things. They group the things they observe. Then they use the terms from their definitions list (Objective #1, Activity #1) to label their groups, using as many different terms as they can.
4. Each student regroups the things he observed in Activity #3 and labels the new groups with list terms (Objective #1, Activity #1) not used in Activity #3.
5. Using a new set of pictures, each student finds and lists names of things observed which can be correctly grouped under the terms from Objective #1, Activity #1, which were not used as labels in Activities #3 and #4.
6. The class practices listing, labeling, and grouping using a new set of pictures and the 20 terms from Objective #1, Activity #1. Their groups may be listed on the chalkboard or on chart paper. Every student suggesting an item for each group should briefly justify his selection.
7. All students practice writing paragraphs which include examples of five (5) or more concepts from Objective #1, Activity #1.

Unit Objective #3: The student will list new examples of selected elements of a modified market economy (examples not previously encountered in the unit).

A. Criterion-Referenced Objective:

1. Given a list of certain elements of a modified market economy, the student will list at least five (5) new examples of each element (examples not previously used in this unit).

B. Learning Activities:

1. Each student will examine selected source materials to locate new examples of the concepts used in Objective #1, Activity #1.
2. Each student will list from memory as many examples of each concept from a given list (Objective #1, Activity #1) as he can.
3. The class will discuss examples from Activity #2 volunteered by individual students. Students may add to their own lists examples mentioned during the discussion.

Unit Objective #4: The student will correctly and briefly define and use in a sentence each of several selected terms from the unit description of a modified market economy.

A. Criterion-Referenced Objective:

1. Given a list of selected terms from the unit description of a modified market economy, the student will briefly define each term and use it in a sentence which shows the meaning of the term as it is used in the unit.

B. Learning Activities:

1. Each student reviews his definitions of terms from Objective #1, Activity #6, add modifies them according to his present understanding.
2. Each student writes a sentence in which he correctly uses each term from Objective #1, Activity #1, so as to show the term's meaning.
3. Class divides into the same small groups as in Objective #1, Activity #3. Each student shares his sentences with his group and makes any changes he wants.

Unit Objective #5: The student will correctly use certain previously encountered terms to describe a modified market economy.

A. Criterion-Referenced Objective:

1. The student will write a two-hundred to three-hundred-word description outlining the basic elements of a modified market economy.

B. Learning Activities:

1. Class reviews terms studied to date.
2. Class examines the group charts made in Objective #1, Activity #3, modifies them according to the class present understanding.
3. Using the charts from Objective #1, Activity #3, for reference, each student outlines a story describing a modified market economy.

4. Student, using his outline from Activity #3 as a source and guide, writes a two-hundred to three-hundred-word description of modified market economy.

C. Materials:

1. Description of some basic elements of a modified market economy.
2. List of definitions of terms.
3. Chart paper and felt marker for use in class preparation of charts.
4. Thumb tacks or tape for posting charts.
5. Chalk and chalkboard (or other materials) to enable teacher to help the class record their ideas.
6. Printed mixed lists of ten (10) of the terms and their definitions from Activity #1 for use in a matching exercise.
7. Printed mixed list of remaining 15 terms and their definitions from Activity #1 for use in a matching exercise.
8. Five (5) different lists of five (5) terms and definitions each, to include all 25 terms from Activity #1, for use in a matching exercise.
9. A set of pictures of people engaged in different kinds of activity (pictures to be taken from readily available sources).
10. A second set of pictures plus the list of terms and definitions from Objective #1, Activity #1.
11. A third set of pictures (for use with Activity #5).
12. Selected source materials in which students can locate new examples of the concepts used in Objective #1, Activity #1. (Such generally available materials as articles, pictures, and advertisements from newspapers and magazines could be useful here. Also, students own life experiences are a ready source of examples. Most Social Studies textbooks contain numerous pictures which provide examples of the concepts used.)

Unit I Materials:

1. Description of some basic elements of a modified market economy¹

Humans all have wants, that is, things they need or think they need in order to exist in the way they choose. Some human wants are more basic than others.

Human wants are satisfied through the use of available resources. When resources are insufficient to meet the wants of people, a condition of scarcity exists.

To cope with the problems of scarcity, people tend to specialize. They specialize when they divide the work needed to fulfill their wants. They also specialize in the ways they occupy and use portions of the earth's surface. Humans specialize, too, through the use of machines to do their work.

¹Adapted from Morrissett, Irving, Ed., Concepts and Structure in the New Social Science Curricula, Holt, Rinehart and Winston, Inc., New York, 1967.

When humans specialize to satisfy their wants they become dependent upon each other. This interdependence results in a need for people to exchange the products of their labor. The market is the overall mechanism through which this exchange occurs. The way people specialize is determined in the market.

To make the exchange of goods and services in the market easier, people use money income form and, also, transportation.

Supply and demand in the market determine the kinds and quality of goods and services produced and what kinds and quality of land, labor, and capital are used to create income.

The relative use of income for spending and saving determines income level and employment level.

Activity in the market is modified by government policy. This policy reflects the values of the society.

List of terms and their definitions:

1. business: That part of the economic system which concerns itself principally with the production and distribution of goods and services.
2. capital: Man-made things used in production. Examples: a machine, a building, a tool.
3. consumer: The user of goods and services produced in the market.
4. distribution of income: The term used to describe who gets what share of the money earned for the production of goods and services.
5. economic system: The overall method of organizing used by society to provide for its wants.
6. exchange: The process of giving money in return for goods and services in return for money.
7. goods: The general term for things, other than services, which are exchanged in the market.
8. government policy: What a society does through its official public leaders in order to help control its economy and achieve social goals.
9. household: That part of the market which mainly provides labor and capital and consumes goods and services.
10. income: The money received by the household and business in the market.
11. interdependence: The relationship which exists among people which results when they specialize in order to satisfy their wants.
12. labor: The principle factor of production which is made up of people and is not land or capital.
13. level of employment: The extent to which available labor is utilized in production, transportation, and exchange of goods and services in the market.
14. market: The overall mechanism which people use to exchange the goods and services they produce when they have become economically interdependent
15. modified market economy: A government influenced system for the production, exchange, and consumption of goods and services.

A MEANS FOR SATISFYING HUMAN WANTS

16. money: Medium of exchange used to facilitate the market by making it unnecessary to physically exchange goods and service.
17. production: The use of land, labor, and capital, or any of these, to create goods.
18. resources: The people and things which can be used to satisfy human wants.
19. saving: The withholding of money from the market by not spending the money.
20. scarcity: The condition which exists when people's wants are greater than their resources.
21. services: The result of useful work which does not produce a tangible product.
22. specialization: The division of effort and resources by people in order to satisfy their wants.
23. spending: The method by which consumers put money into the market in exchange for the goods and services they produce.
24. transportation: The movement of goods and people from place to place to facilitate the market.
25. values: The set of ideas which describes what a society feels is good or important in life.

Mixed list of ten of the terms and their definitions from Activity #1.

Matching Exercise

- | | |
|-----------|------------------------|
| <u>6</u> | distribution of income |
| <u>5</u> | business |
| <u>8</u> | income |
| <u>7</u> | exchange |
| <u>4</u> | household |
| <u>9</u> | level of employment |
| <u>3</u> | interdependence |
| <u>2</u> | scarcity |
| <u>10</u> | money |
| <u>1</u> | production |

1. The use of land, labor and capital or any of these to create goods.
2. The condition which exists when people's wants are greater than their resources.
3. The relationships which exist among people which result when they specialize in order to satisfy their wants.
4. That part of the market which mainly provides labor and capital and consumes goods and services.
5. That part of the economic system which concerns itself principally with the production and distribution of goods and services.
6. The term used to describe who gets what share of the money earned for the production of goods and services.
7. The process of giving money in exchange for goods and services and giving goods and services in exchange for money.

A MEANS FOR SATISFYING HUMAN WANTS

8. The money received by the household and business in the market.
9. The extent to which available labor is utilized in the production, transportation, and exchange of goods and services in the market.
10. A medium of exchange used to facilitate the market by making it unnecessary to physically exchange goods and services.

Mixed list of the remaining 15 terms and their definitions from Activity #1.

<u>5</u>	resources	<u>14</u>	spending
<u>8</u>	labor	<u>7</u>	services
<u>13</u>	modified market economy	<u>6</u>	specialization
<u>1</u>	capital	<u>10</u>	values
<u>2</u>	economic system	<u>11</u>	consumer
<u>12</u>	government policy	<u>3</u>	goods
<u>4</u>	market	<u>15</u>	transportation
<u>9</u>	saving		

1. Man-made things used in production. Examples: a machine, a building tool.
2. The overall method of organizing used by society to provide for its wants.
3. The general term for things, other than services, which are exchanged in the market.
4. The overall mechanism which people use to exchange the goods and services they produce when they have become economically interdependent.
5. The people and things which can be used to satisfy human wants.
6. The division of effort and resources by people in order to satisfy their wants.
7. The result of useful work which does not produce a tangible product.
8. The principle factor of production which is made up of people and is not land or capital.
9. The withholding of money from the market by not spending the money.
10. The set of ideas which describes what a society feels is good or important in life.
11. The user of goods and services produced in the market.
12. What a society does through its official public leaders in order to help control its economy and achieve social goals.
13. A government influenced system for the production, exchange, and consumption of goods and services.
14. The method by which consumers put money into the market in exchange for the goods and services they produce.
15. The movement of goods and people from place to place to facilitate the market.

Mixed lists of five (5) terms and their definitions from Activity #1.

Matching Exercise #1

<u>3</u>	exchange
<u>1</u>	level of employment
<u>5</u>	capital
<u>4</u>	resources
<u>2</u>	specialization

124

A MEANS FOR SATISFYING HUMAN WANTS

1. The extent to which available labor is utilized in the production, transportation, and exchange of goods and services in the market.
2. The division of effort and resources by people in order to satisfy their wants.
3. The process of giving money in return for foods and services and giving goods and services in return for money.
4. The people and things which can be used to satisfy human wants.
5. Man-made things used in production. Examples: a machine, a building, a tool.

Matching Exercise #2

- | | |
|----------|-----------------|
| <u>3</u> | transportation |
| <u>1</u> | business |
| <u>5</u> | household |
| <u>4</u> | money |
| <u>2</u> | interdependence |

1. That part of the economic system which concerns itself principally with the production and distribution of goods and services.
2. The relationships which exists among people which results when they specialize in order to satisfy their wants.
3. The movement of goods and people from place to facilitate the market.
4. A medium of exchange used to facilitate the market by making it unnecessary to physically exchange goods and services.
5. That part of the market which mainly provides labor and capital and consumers goods and services.

Matching Exercise #3

- | | |
|----------|----------|
| <u>4</u> | values |
| <u>5</u> | consumer |
| <u>2</u> | market |
| <u>1</u> | goods |
| <u>3</u> | saving |

1. The general term for things, other than services, which are exchanged in the market.
2. The overall mechanism which people use to exchange the goods and services they produce when they have become economically interdependent.
3. The withholding of money from the market by not spending the money.
4. The set of ideas which describes what a society feels is good or important in life.
5. The user of goods and services produced in the market.

Matching Exercise #4

- | | |
|----------|------------------------|
| <u>1</u> | production |
| <u>4</u> | services |
| <u>3</u> | government |
| <u>5</u> | distribution of income |
| <u>2</u> | scarcity |

A MEANS FOR SATISFYING HUMAN WANTS

1. The use of land, labor, and capital, or any of these, to create goods.
2. The condition which exists when people's wants are greater than their resources.
3. What a society does through its official public leaders in order to help control its economy and achieve social goals.
4. The result of useful work which does not produce a tangible product.
5. The term used to describe who gets what share of the money earned for the production of goods and services.

Matching Exercise #5

<u>2</u>	spending
<u>3</u>	income
<u>5</u>	economic system
<u>4</u>	labor
<u>1</u>	modified market economy

1. A government influenced system for the production, exchange and consumption of goods and services.
2. The method by which consumers put money into the market in exchange for the goods and services they produce.
3. The money received by the household and business in the market.
4. The principle factor of production which is made up of people and is not land or capital.
5. The overall method of organizing used by a society to provide for its wants.

D. Evaluation:

Pre-Test

Class discussion of the production, exchange and consumption of goods and services in our lives.

Given a list of selected terms, such as supply, demand, consumer, business, labor, etc., individual class members voluntarily explain what they know or think about the meaning of each term.

Terms for use in Unit I Pre-Tests:

business	income	resources
capital	interdependence	saving
consumer	labor	scarcity
distribution of income	land	services
economic system	level of employment	specialization
exchange	market	spending
goods	modified market economy	transportation
government policy	money	values
household	production	

Match at least 80% of a set of given terms with their description by using the terms to correctly complete a list of statements. Identify examples of, or evidence of, at least three (3) of the concepts listed in each picture in a given set of pictures from current newspapers and magazines, and from available textbooks. Distinguish examples of the concepts named from non-examples in a given list of concepts from the unit. Write a paragraph containing examples of at least five (5) concepts from a given list of concepts from this unit. List new examples of the concepts on a given list of concepts from the unit. Define terms in a two-hundred to three-hundred-word description of the basic elements of a modified market economy.

UNIT I, TEST I

Use the following terms to correctly complete each statement:

TERMS:

- | | |
|-----------------------------|----------------------------|
| 1. market | 14. specialization |
| 2. business | 15. consumer |
| 3. interdependence | 16. values |
| 4. services | 17. production |
| 5. scarcity | 18. economic system |
| 6. saving | 19. household |
| 7. government policy | 20. labor |
| 8. money | 21. income |
| 9. exchange | 22. goods |
| 10. capital | 23. resources |
| 11. transportation | 24. distribution of income |
| 12. spending | 25. level of employment |
| 13. modified market economy | |

STATEMENTS:

- The movement of goods and people from place to place to facilitate the market is known as (transportation).
- The overall method of organizing used by a society to provide for its wants is called the society's (economic system).
- The set of ideas which describes what a society feels if good or important in life is called the society's (values).
- The withholding of money from the market by not spending the money is called (saving).
- (Scarcity) is the condition which exists when people's wants are greater than their resources.
- What a society does through its official public leaders in order to help control its economy and achieve social goals is called (government policy).
- A medium of exchange used to facilitate the market by making it unnecessary to physically exchange goods and services called (money).
- The process of giving money in return for goods and services and giving goods and services in return for money is called (exchange).

9. (Capital is the term used to describe man-made things used in production. Examples are: a machine, a building, a tool.
10. The relationship among people which results when they specialize in order to satisfy their wants is called (interdependence).
11. That part of the economic system which concerns itself principally with the production and distribution of goods and services is known as (business).
12. Those who use the goods and services produced in the marketplace are called (consumers).
13. That part of the market which mainly provides labor and capital and consumes goods and services is called the (household).
14. The principle factor of production which is made up of people and is not land or capital is called (labor).
15. The use of land, labor, and capital, or any of these to create goods is called (production).
16. The division of effort and resources by people in order to satisfy their wants is called (specialization).
17. When people become economically interdependent because they have specialized to satisfy their wants, they require a (market) in which they exchange the goods and services they produce.
18. Consumers put money into the market by (spending) it in return for goods and services they receive.
19. In a market economy consumers use their incomes for savings or to obtain goods and (services).
20. A government influenced system for the production, exchange and consumption of goods and services is called (modified market economy).
21. The extent to which available labor is utilized in the production, transportation, and exchange of goods and services in the market is called the (level of employment).
22. The money received by the household and business in the market is called (income).
23. The people and things which can be used to satisfy human wants are called (resources).
24. The general term for things, other than services, which are exchanged in the market is (goods).
25. The term which has to do with describing who gets what share of the money earned for the production of goods and services is (distribution of income).

UNIT I, TEST II

In each of the pictures provided find examples of or evidence of at least three (3) of the concepts listed below. In the correct answer spaces list the three (3) concepts for each picture and explain what in the picture was an example.

market
business
interdependence
spending
specialization
modified market economy
services
consumer

transportation
scarcity
capital
goods
resources
money
saving
government policy

exchange
production
values
household
labor
economic system
level of employment
income
distribution of income

Picture 1

Three concepts for which examples were found.

Brief description of or explanation of each example.

1. _____
2. _____
3. _____

Picture 2

1. _____
2. _____
3. _____

Picture 3

1. _____
2. _____
3. _____

Picture 4

1. _____
2. _____
3. _____

Picture 5

1. _____
2. _____
3. _____

Picture 6

1. _____
2. _____
3. _____

Picture 7

1. _____
2. _____
3. _____

Picture 8

1. _____
2. _____
3. _____

UNIT I, TEST III

Directions:

Each underlined term below is followed by three (3) descriptions of people or things. By encircling YES or NO after each description, indicate whether it is or is not an example of the underlined term or show evidence of it. Briefly explain your answer on the line below the description.

CONSUMER

A lady buying a hat.	YES	NO
A rock at the bottom of a lake.	YES	NO
A boy playing baseball.	YES	NO

PRODUCTION

A girl weaving a basket.	YES	NO
A farmer's chicken laying an egg.	YES	NO
Children swimming in a backyard pool.	YES	NO

EXCHANGE

An insurance agent collecting a premium.	YES	NO
A girl riding her bike.	YES	NO
A woman buying chewing gum from a vending machine.	YES	NO

A MEANS FOR SATISFYING HUMAN WANTS

SAVING

A lady who keeps pennies in a jar.	YES	NO
A boy buying a new bike.	YES	NO
A house on fire.	YES	NO

SCARCITY

A ship sailing on the ocean.	YES	NO
A starving child.	YES	NO
A flat tire on your car.	YES	NO

BUSINESS

An auto assembly plant.	YES	NO
Flowers for sale.	YES	NO
A Sears repairman fixing a T.V. set.	YES	NO

SPECIALIZATION

A business executive at work.	YES	NO
A dairy farmer milking 30 cows.	YES	NO
A lady who writes books for a living.	YES	NO

MODIFIED MARKET ECONOMY

Government rules for air travel.	YES	NO
Fish swimming in a lake.	YES	NO
Speed limit sign along a highway.	YES	NO

RESOURCES

The rivers in Brazil.	YES	NO
The people of China.	YES	NO
The name of Canada	YES	NO

LABOR

Bathers at the seashore.	YES	NO
Gold in South Africa.	YES	NO
Fishermen on a tuna boat.	YES	NO

INCOME

Money collected for delivering newspapers.	YES	NO
The score of your team's football game.	YES	NO
Interest received on a savings account.	YES	NO

LEVEL OF EMPLOYMENT

Job wanted ads in a newspaper.	YES	NO
The number of workers without jobs.	YES	NO
A family enjoying a camping trip.	YES	NO

DISTRIBUTION OF INCOME

The ghetto section of a city.	YES	NO
A shortage of pennies in stores.	YES	NO
The color of a dollar bill.	YES	NO

GOODS

A pilot landing a commercial airliner.	YES	NO
The dogfood you buy for your dog.	YES	NO
A broken window pane in your house.	YES	NO

HOUSEHOLD

A family trip to the grocery store.	YES	NO
A bank teller counting money.	YES	NO
A bachelor watching T.V. at home.	YES	NO

TRANSPORTATION

Your pet dog running away.	YES	NO
The travel agency on Main Street.	YES	NO
A tractor-trailer carrying frozen fish.	YES	NO

GOVERNMENT POLICY

A new highway from New York to Los Angeles.	YES	NO
The local fire marshall at work.	YES	NO
Federal controls on nuclear energy.	YES	NO

INTERDEPENDENCE

Shopping at a clothing store.	YES	NO
Swimming in a nearby river.	YES	NO
Trapping lobsters for shipment to market.	YES	NO

SPECIALIZATION

Father driving to his office to work.	YES	NO
The President of the U.S. signing a treaty.	YES	NO
Watching the rain during a storm.	YES	NO

CAPITAL

A machine used to manufacture pencils.	YES	NO
The cow in a farmer's dairy herd.	YES	NO
The unused coal in the Rocky Mountains.	YES	NO

MONEY

The bank which offers savings accounts.	YES	NO
The shells on Miami Beach.	YES	NO
The cash you receive for babysitting.	YES	NO

SERVICES

A store clerk selling plumbing supplies.	YES	NO
The newspaper you get at home.	YES	NO
The book you bought at the store.	YES	NO

MARKET

The boardwalk at Atlantic City.	YES	NO
A cider mill in Arkansas.	YES	NO
A roadside vegetable stand.	YES	NO

ECONOMIC SYSTEM

A storekeeper placing an ad in a newspaper.	YES	NO
An ocean freighter carrying automobiles abroad.	YES	NO
A boy picking apples to eat.	YES	NO

VALUES

Buying toothpaste containing a whitener.	YES	NO
Birds singing in a public park.	YES	NO
A mountaintop covered with snow.	YES	NO

UNIT I, TEST IV

Directions: Write a paragraph about people at work. Use examples of at least five (5) of the terms listed below. Check the terms you use.

_____	scarcity
_____	specialization
_____	interdependence
_____	resources
_____	capital
_____	labor
_____	production

PARAGRAPH:

UNIT I, TEST V

Directions: Here are some terms from this unit. Some examples of these terms have already been used in the unit. List or describe one new (not yet used) example of each term.

TERMS

NEW EXAMPLES

Values:

Goods:

Services:

Government Policy:

Consumer:

Business:

UNIT I, TEST VI

Directions: Below are listed five (5) terms from this unit. Define each term as it was used in the unit. Then use each term in a sentence so as to show its unit meaning.

Market

Definition:

Sentence:

Economic System

Definition:

Sentence:

Household

Definition:

Sentence:

Distribution of income

Definition:

Sentence:

Level of employment

Definition:

Sentence:

UNIT I, TEST VII

Write a two-hundred or three-hundred-word description of the basic elements of a modified market economy as they were used in this unit. In other words, write a description of a modified market economy using as many terms from this unit as are needed to describe it.

Unit Title: KINDES OF WORK PEOPLE DO

- I. Unit Overview: This unit is intended to help eighth-grade students become better able to identify different types of labor and to begin to see relationships between labor and other market elements.
- II. Unit Content Outline:
 - A. Observing people at work at various times and places.
 - B. Identifying different types of labor.
 - C. Relating different types of labor to other market elements.
- III. Unit Objectives: Students will...
 - 1. identify various types of labor among other market elements in given situations.
 - 2. describe the relationship of various types of labor to other market elements in given situations.
 - 3. identify examples of selected concepts useful in describing a modified market economy.

IV. Unit Description:

Unit Objective #1: The students will identify various types of labor among other market elements in given situations.

A. Criterion-Referenced Objectives:

- 1. Given a mixed set of examples of land, labor, and capital, the student will identify which are examples of land, of labor, and of capital.
- 2. Given a pictorial description of a number of examples of various market activities, the students will correctly identify at least ten (10) examples of labor shown in the pictures.
- 3. Given a set of descriptions of various marketplace activities, the student will identify examples of types of labor and will satisfactorily justify his choice in them. Eighty percent correct will be considered acceptable.

B. Learning Activities:

- 1. Each student makes a list of names of 25 objects and activities in his community.
- 2. Each student studies descriptions of the terms land, labor, and will satisfactorily justify his choices in them. Eighty percent correct will be considered acceptable.
- 3. Each student indicates on his list from Activity #1 whether the objects and activities are or contain examples of land, labor, and/or of capital.
- 4. Given a set of description of objects and activities from various places and times, each student indicates which are or contain examples of land, of labor, and/or of capital.

5. The class will view a filmstrip showing people and places in various parts of the world.
6. Each student will tell which frames in the filmstrips contain examples of labor and what those examples are.
7. The student will read descriptions of people at work at various times and places and will identify in the descriptions the various examples of labor included.

Unit Objective #2: Students will describe the relationship of various types of labor to the marketplace in general.

A. Criterion-Referenced Objective:

1. Given a list of ten types of work people do, the student will describe in writing the relationship of at least eight (8) types given to the market in general.

B. Learning Activities:

1. Each student will study a set of statements which explain how various types of work are related to other selected elements in the market.
2. Given a list of ten types of work, none of which was used in Activity #1, each student will explain how each of the ten types is related to other selected elements in the market.

C. Materials:

1. Prepared written descriptions of the terms: land, labor, and capital to be shared with the class.
 2. Descriptions of objects and activities from various times and places.
 3. Filmstrip showing people and places in various parts of the world.
 4. Written descriptions of people at work at various times and places.
 5. A prepared set of statements explaining how various types of work are related to other selected elements of the economy.
 6. A list of ten (10) selected types of work people do.
- (3) Filmstrips showing people and places in various parts of the world. A useful source of ideas here might be the filmstrips, "Work, Part I", from the set "Man: A Cross-Cultural Approach", by Herbert and Judith Klinger.
 - (4) Written descriptions of people at work in various times and places. The teacher's manual for the filmstrips, "Work" in #3 has numerous useful descriptions.

- (5) A prepared set of statements explaining how various types of work are related to other selected elements of the economy.

Examples:

1. Mr. Smith is production supervisor at a plastics products factory. His job includes, among other things, giving accurate estimates of raw materials needed to produce a given amount of the finished product to fill customers' orders. His estimates are used by the supervisor to accurately determine how much raw material should be purchased and kept ready for use in production.
2. Mr. Richet drives a van which transports finished products from the factory to the warehouse. His deliveries must be made safely and on time so the warehouse manager will always have enough of the products to ship to retailers as they order the products.
3. Mrs. Skovo is a computer technician at a busy airport. Her principal responsibility is to accurately receive and record information having to do with the number of seats available and requested on each flight. Passengers, pilots, food-preparation people, and ticket agents rely on her services.

- (6) A list of 10 selected types of work people do.

1. Shopping at a retail store to supply a family's needs.
2. Grinding lenses for microscopes.
3. Designing fishing reels for sale to sportsmen.
4. Serving as a security guard at an oil refinery.
5. Operating a ship's radio on a trans-atlantic freighter.
6. Delivering home heating oil to customers.
7. Grooming show dogs.
8. Operating a rolling mill at a steel plant.
9. Typing letters for an advertising executive.
10. Repairing shoes at a shoe shop.

D. Evaluation:

Pre-Test

Each student will write a description of the life of one person he knows. The description should include the kind of work the person does, what compensation the worker gets for his work, and how the worker provides for his basic and other wants.

1. Identify examples of land, labor, and capital from a mixed list of examples.
2. Identify through observation or inference, ten examples of labor in a given set of pictures.
3. Identify through observation or inference, ten examples of types of labor in each of a given set of descriptions of various market activities.
4. Describe in writing the relationship of eight (8) kinds of work, on a given list of ten (10), to the marketplace in general.

UNIT II, TEST I

Directions: Below are some examples of land, labor, and capital. Indicate which are examples of land, of labor, and of capital by writing the correct one of these terms in the blank provided after each description.¹

1. The coal being removed from a coal mine in West Virginia. (land)
2. The trees being cut into lumber at a New England sawmill. (land)
3. The workers putting automobiles together on an assembly line in Detroit. (labor)
4. The artificial fertilizer being spread on a field by a farmer in Virginia. (capital)
5. A ski instructor at a ski resort in Colorado. (labor)
6. The president of General Motors Corporation conducting a meeting of his corporation's vice-presidents. (labor)
7. The commercial airliner landing at a Miami airport. (capital)
8. The fish caught by commercial fishermen off the coast of Maine. (land)
9. The tools used by a bricklayer building a new store. (capital)
10. The paper used in printing an evening newspaper. (capital)
11. The oil flowing through a desert pipeline in the Middle East. (land)
12. The fiberglass used to build a boat. (capital)
13. The limestone used to make concrete for a highway. (land)
14. The policeman patrolling the business. (labor)
15. The lawnmower used by a boy to mow his neighbor's lawn. (capital)
16. Latex being gathered for use in making automobile tires. (land)
17. A doctor testing a patient in a hospital. (labor)
18. The electricity being used to operate. (capital)
19. The fence around a corral on a Texas cattle ranch. (capital)
20. The wild horses being rounded up on a plain in Asia. (land)

¹For some of the examples used there may be more than one correct label. A student should be able to justify any answer he gives.

UNIT II, TEST II

Directions: Examine closely the two pictures shown to find examples of work taking place or having already taken place in each picture. Describe the examples you find in the spaces provided. Describe ten examples for each picture. Explain each answer.

Practice: Study these examples of evidence of work.

1. A man pushing a wheelbarrow. The man is working.
2. A chair, shows evidence that someone made a piece of furniture.
3. A steel plow in use. Shows evidence that someone obtained iron from the earth.

Evidence of work in Picture #1.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

Evidence of work in Picture #2.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

UNIT II, TEST VII

Directions: Read each description of market activity given below. In each description find ten examples of work taking place or having taken place. List the examples you find in the spaces provided. Explain each of your answers.

Description #1

When the alarm clock signals 4:00 a.m., the farmer pushes aside the blankets on his warm, comfortable bed and goes downstairs to eat a delicious breakfast his wife has prepared from the groceries she bought at the store the day before. After finishing his meal and listening to the local weather forecast on the radio, the farmer goes outside to his equipment shed to fuel up his potato digger and begin a long day's work in the field.

Examples:

- | | |
|----|-----|
| 1. | 6. |
| 2. | 7. |
| 3. | 8. |
| 4. | 9. |
| 5. | 10. |

Description #2

Mr. Williams and two (2) other engineers at the Jonesville Plant of Aerodyne, Inc., finish up their lunch at Marie's place. They tip Anne, their waitress, and thank her, then cross the street to Sam's Service Station where they watch the attendant finish lubricating their company car. The three men drive to City Airport to leave on a tour of Aerodyne's warehouse facility at Johnstown, a hundred fifty miles away. They put their tickets and board their plane. Upon arriving at the Johnstown Airport they take a taxi to the warehouse, where they begin their tour with the warehouse supervisor as their guide.

Examples:

- | | |
|----|-----|
| 1. | 6. |
| 2. | 7. |
| 3. | 8. |
| 4. | 9. |
| 5. | 10. |

UNIT I, TEST IV

Directions: List below are ten kinds of work. In the space provided, write about each of eight (8) of them telling how each is related to other market elements such as land, capital, supply, demand, etc.

Kinds of Work:

1. Delivering chickens to market.
2. Oiling machinery in a factory.
3. Selling insurance.
4. Preparing advertisements for T.V.
5. Installing telephone wires on poles.
6. Driving an ambulance.
7. Managing an auto repair shop.
8. Teaching FBI Agents
9. Making machine parts.
10. Playing professional baseball.

Descriptions:

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.

Unit Title: GETTING WHAT WE NEED

I. Unit Overview: Through this unit the student will come to see the worker and business as consumers. The student will examine the household as the principle means through which the worker consumes in the marketplace.

II. Unit Content Outline:

- A. The worker as a consumer.
- B. Business as a consumer.
- C. The household in the marketplace.

III. Unit Objectives: The student will...

- 1. identify examples of the worker as a consumer.
- 2. recognize examples of business as a consumer.
- 3. describe the role of the household as a medium of consumption in the marketplace.
- 4. demonstrate a beginning understanding of selected concepts having to do with the consumption of goods and services in the marketplace.

IV. Unit Description:

Unit Objective #1: The student will identify examples of the worker as a consumer.

A. Criterion-Referenced Objective:

- 1. Given a set of descriptions, each of which illustrates some kind of activity in the marketplace, the student will correctly identify those descriptions which contain examples of a worker (or workers) as a consumer. Three out of four answers correct will be considered acceptable.

B. Learning Activities:

- 1. Each student studies a description of the terms consume, consumption, and consumer.
- 2. Each student studies various examples of consumption and consumers.
- 3. Each student examines various examples of market activity and determines which contain examples of workers as consumers. Pictures, films, and verbal descriptions of people in various places and times are used here to provide the examples.

Unit Objective #2: The student will recognize examples of business as a consumer.

A. Criterion-Referenced Objective:

- 1. Given a set of descriptions, each of which illustrates some kind of activity in the marketplace, the student will correctly identify those descriptions which contain examples of business as a consumer. Three out of four answers correct will be considered acceptable.

B. Learning Activities:

1. The class studies examples of consumption by business, and relates them to the diagrams on their group charts from Unit 1, Objective 1, Activity #3.
2. Each student lists examples of businesses as consumers in the local community.
3. Each student reads descriptions of various kinds of activities in the market place and identifies those which contain examples of business as a consumer.

Unit Objective #3: The student will describe role of the household as a medium of consumption in the marketplace.

A. Criterion-Referenced Objective:

1. The student will write a description of the household as a medium of consumption in the marketplace. The description should contain examples of at least ten different kinds of goods and ten kinds of services consumed.

B. Learning Activities:

1. The class studies and discusses an explanation of the term, household.
2. The class reexamines the charts made in Unit 1, Objective 1, Activity 3, to relate the household to other elements in the market.
3. Each student lists as many different goods and services consumed in his own household as he can.
4. The class studies examples of other households in various places and times to find evidence of consumption.
5. Each student writes a description of the household as a medium of consumption and includes examples of consumption by the household of at least ten (10) different kinds of goods and ten (10) different kinds of services.
6. Create a picture book showing examples of goods and services consumed by the household.

Unit Objective #4: The student will demonstrate a beginning understanding of selected terms having to do with the consumption of goods and services in the marketplace.

A. Criterion-Referenced Objective:

1. Given a set of descriptions of terms having to do with consumption in the marketplace, the student will correctly match at least seventy percent of the descriptions with the terms they describe.

B. Learning Activities:

1. Given a set of concepts and definitions each student will list at least one example of each concept.
2. Student voluntarily share their examples with the class.
3. Without reference to the definitions given in Activity #1, each student writes, in his own words, a definition for each term (concept) in Activity #1.

C. Materials:

1. A prepared written description of the terms: consume, consumption, and consumer.
2. List of examples of consumption and consumers for student use.
3. Pictures, films, and written descriptions of people at work (at various times and places) in which students can find examples of workers as consumers.
4. Prepared written and pictorial examples of consumption by business.
5. Written examples of various kinds of activities in the marketplace.
6. A teacher-presented description of the term, "household".
7. Student charts made Unit 1, Objective 1, Activity #3.
8. Examples of households in other times and places than our own, showing evidence of consumption of goods and services.
9. Materials (magazines, paper, glue, staples, etc.) for student preparation of a picture book showing examples of goods and services consumed by the household.
10. A list of terms (with definitions) from the unit.

- (1) A prepared written description of the terms: consume, consumption and consumer.
 - a. consume: To make use of goods and/or services.
 - b. consumption: The act or process of consuming goods and/or services.
 - c. consumer: The user of goods and/or services.
- (2) List of examples of consumption and consumers.

Examples of consumption:

 - a. The use of asphalt to surface a road.
 - b. The use of salt by a housewife to season food.
 - c. The use of a school crossing guard to protect children crossing the street.
 - d. The use of oil by a generating station to produce electricity.
 - e. The use of paper by a student writing a theme.
 - f. The use of a news magazine to learn about news events.

Examples of consumers:

 - a. a student reading a book.
 - b. a bank using a computer.
 - c. an auto assembly plant using workers to make cars.
 - d. a mother pinning a diaper on a baby.
 - e. a tenant renting an apartment.
 - f. a farmer feeding corn to his chickens.

- (3) Pictures, films, and written descriptions of people at work in various times and places.
 - a. Pictures and their captions from the Fideler Co., textbooks on World Cultures.
 - b. The filmstrips, "Work, Part II", from the set "Man; A Cross-Cultural Approach", by Herbert and Judith Klinger. Educational Resources Incorporated, South Orange, New Jersey 07079.
- (4) Examples of consumption by business.
- (5) Written examples of various kinds of activities in the marketplace. (It is intended that current sources such as newspapers and news-magazines be used as source for (4) and (5).)
- (6) A description of the term, "household". The set of all persons who live together in the same house and which in the market, can be thought of as an economic unit.
- (8) Examples of households in other times and places showing consumption of goods and services.
(The Fideler Co., books on World Cultures provide many pictorial and written examples of households in various parts of the world.)
- (10) A list of terms (with definitions) from this unit.
 - consumption: The use of goods and/or services.
 - employment: The act of making use of the services of people. (Also, the use of goods.)
 - household:
 - price: The amount of money for which something is or will be exchanged.
 - retail: The sale of commodities in small units to the consumer.
 - salary: Pay given at regular, relatively length intervals for services performed.
 - wages: Pay given for work performed during a short, specified period of time.
 - wholesales: The sale of commodities to retailers rather than consumers.

D. Evaluation:

Each student should describe, orally or in writing, the kinds of things (goods and services) his family or some other family buys. He should include an explanation of where he thinks those things come from and how they eventually become to the family.

POST-TEST

Identify 3 out of 4 descriptions containing examples of worker as consumers from a given set of descriptions.

Identify 3 out of 4 descriptions containing examples of business as a consumer from a given set of descriptions.

Write a description of the household as a consumer. The description should contain examples of at least ten different kinds of goods and ten different kinds of services consumed.

Match 70% of a set of given terms with their definitions.

UNIT III, TEST I

Directions: Below are descriptions of people doing a variety of things. Identify those descriptions which contain examples of workers as consumer by encircling YES after each one that does. For each YES you encircle, briefly explain your choice on the line provided.

Description #1

Mary has earned \$4.50 by baby sitting for a friend. She put all her earnings into a savings account. By the end of the year she hopes she will have earned interest on her savings. YES

Explanation:Description #2

George's father rides the bus to work every day. His father is a machinist at a radio and T.V. manufacturing plant. George's father works 8 to 10 hours a day, 5 days per week. YES

Explanation:Description #3

John's mother goes to work at 7:00 o'clock every day. The night before, she packs a lunch for her husband and leaves lunch money for her children to buy their lunches at school. YES

Explanation:Description #4

Jim's dad is an officer in the U.S. Army. Jim receives letters from his dad telling how important it is for a young man to be prepared for a career. YES

Explanation:Description #5

Mike's grandfather is retired after 40 years as a clerk, packer, warehouseman, and foreman at a nearby shoe factory. Mike receives gifts of new shoes from his grandfather and in return sends thank-you cards he buys at the local card shop. YES

Explanation:

UNIT III, TEST III

Directions: Write a description of the household as a consumer. The description should contain examples of at least ten different kinds of goods and ten different kinds of services consumed.

UNIT III, TEST IV

Directions: Match the terms listed with their correct definitions by writing the number of each definition in the blank space next to its matching term.

TERMS:

_____ (5)	consumption
_____ (4)	household
_____ (2)	wages
_____ (6)	salary
_____ (1)	employment
_____ (7)	wholesale
_____ (3)	retail
_____ (8)	price

1. The act of making use of the services of workers.
2. Pay given for work performed during a short, specified period of time. Example: \$5.00 per hour.
3. The sale of commodities in small units to the consumer.
4. All the persons who live together in the same house.
5. The use of goods and services.
6. Pay given at regular intervals for services performed. For example: \$10,000 per year.
7. The sale of commodities to retailers rather than consumers.
8. The amount of money for which something is or will be exchanged.

UNIT III, TEST V

Directions: Below are descriptions of business involved in a variety of activities. Identify those descriptions which contain examples of business as consumers by encircling YES after each one that does. For each YES you encircle, briefly explain your choice on the line provided.

Description #1

The Marcro Company ships 50 tons of general merchandise each week via 3 long distance trucking companies. Most of the company's customers are in the Southeast YES

Explanation:Description #2

Johnstown Textiles, Inc., sells 300,000 garments per year to New York retailers. The company employs 350 production line workers. YES

Explanation:Description #3

Hairdresser, Francois, lives at 513 Andrews Lane. Francois has more customers than he can accommodate and has to refuse appointments to some. YES

Explanation:Description #4

The company baseball team at Billy's Bike Shop earns enough money to pay for all the baseballs it uses in one seasons. YES
The team has won all its games in the last three years.

Explanation:Description #5

T.V. station WRTR, Channel 19, is located on a hilltop overlooking a lake. In their spare time, many of the employees of the station swim and fish in the lake. YES

Explanation:

Unit Title: USING GOVERNMENT TO SOLVE WORKER'S PROBLEMS

- I. Unit Overview: This unit is intended to give the student some understanding of possible reasons why workers might attempt to influence government decision-making. It will also help them become aware of some of the means used by citizens to exert such influence.
- II. Unit Content Outline:
 - A. Reasons why workers attempt to influence government decision-making.
 - B. Means through which workers attempt to influence government decision-making.
- III. Unit Objectives: The student will...
 1. list some possible reasons why workers might attempt to influence government decision-making.
 2. describe several means through which workers attempt to influence government decision-making to improve their market situation.
- IV. Unit Description:

Unit Objective #1: The student will list some possible reasons why workers might attempt to influence government decision-making.

 - A. Criterion-Referenced Objective:
 1. The student will list at least ten possible reasons why workers might attempt to influence government decision-making regarding the market.

Unit Objective #2: The student will describe several means through which workers attempt to influence government decision-making to improve their market situation.

 - A. Criterion-Referenced Objective:
 1. Given a set of three (3) or more problems workers might encounter in the market, each student will describe how workers might use their government to help them solve the problems.
 - B. Learning Activities: The students will...
 1. discuss a set of news articles describing some facets of government activity related to the marketplace.
 2. identify in the news article four (4) reasons for public interest in government decision-making.
 3. identify in news article the means through which people are attempting to influence government decision-making regarding economic conditions.
 4. The class will discuss some possible economic problems which workers face and list reasons why workers might attempt to influence government decision-making to solve these problems.

5. examine news reports of attempts by various organizations, including labor groups, to influence government decision-making regarding market conditions.
6. describe how workers might use their government to solve several problems workers might encounter in the marketplace.

C. Materials:

1. A set of news articles which describe a variety of government activities related to the market place.
2. A set of news articles which name means through which citizens are attempting to influence government decision-making regarding economic conditions.
3. A set of news articles describing the efforts of various organizations, including labor groups, to influence government decision-making regarding market conditions.

D. Evaluation: PRE-TEST

Given a set of three (3) problems workers might encounter in the marketplace, each student describes, in writing, what workers might do to solve those problems. Individual students voluntarily share their ideas with the class during the course of a class discussion.

Three (3) problems workers might encounter in the marketplace.

1. Working conditions at the River Road plant of Econometal Co. are hazardous. Seventeen (17) employees, including two supervisory persons, have been injured in accidents in and around the plant in the past year. One of those injured was permanently crippled while working on faulty scaffolding at the main plant building. Repeated complaints about the hazardous working conditions at Econometal have been made by individual workers and by union representatives of Econometal's employees. The company has promised five (5) times to correct the hazards but has to date done nothing else about them.
2. The national government has set the minimum wage for most hourly-paid workers at \$1.00 per hour. Most workers are covered by this minimum wage law, but not farm workers. The average hourly pay received by farm workers is 45¢.
3. Most workers in the downtown area of the city of Big Boulder commute to work on trains and buses from their homes in nearby communities. For six months now the transportation workers who operate the trains and buses have been on strike for higher pay. Because of the strike, most workers have been driving their cars to work, sharing rides with others whenever possible. But the increased number of autos in the city has increased the time it takes to go back and forth to work by four hours, making commuting by car very inconvenient.

POST-TEST

List at least ten possible reasons why workers might try to influence government decision-making regarding the market. Select three (3) organizations and/or individuals (from a list of 10 given) and tell in writing how workers might use those three (3) to influence government decision-making in efforts to improve their market situation.

UNIT IV, TEST I

Direction: In the spaces provided, list ten reasons why workers might try to influence government decision-making regarding the market.

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.

UNIT IV, TEST II

Directions: Below are listed ten individuals and organizations. In the space provided, tell how each of any three of them might be used by workers to influence government decision-making for the purpose of improving the worker's market situation. On the line provided, write the name of each individual or organization you choose to write about.

1. Congressman or senator
2. A.F.L. - C.I.O. or other union
3. Political party
4. Neighborhood group or civic association
5. Local newspaper, radio, or T.V. station
6. Common Cause or other citizen political group
7. Chamber of Commerce
8. Better Business Bureau
9. American Medical Association
10. American Civil Liberties Union or other citizens' rights group

USING GOVERNMENT TO SOLVE WORKER'S PROBLEMS

1. Name of group or individual: _____
Description of possible use by workers: _____
2. Name of group or individual: _____
Description of possible use by workers: _____
3. Name of group or individual: _____
Description of possible use by workers: _____

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Klinger, Herbert and Judith. Man: A Cross-Cultural Approach, Teacher's Manual. Educational Resources, Inc., South Orange, N.J. 07079.

Morrissett, Irving, ed., Concepts and Structure in the New Social Science Curricula. Holt, Rinehart and Winston, Inc., New York, 1967.

National Council for the Social Studies. 39th Yearbook. 1968.

Unit Title: BASIC SKILLS

- I. Unit Overview: This unit is designed to introduce basic social studies skills to low-ability students. The skills emphasized in this unit will include map skills, reading skills, and graphing skills. The skills developed in this unit will be used as a basis for work during the spring semester.

II. Unit Content Outline:

- A. Maps
 - 1. floor plans
 - 2. grid maps
 - 3. road maps
 - 4. weather maps
 - 5. product maps
 - 6. political maps
 - 7. climate maps
 - 8. rainfall maps
 - 9. community maps
- B. Map Related Skills
 - 1. symbols
 - 2. legend
 - 3. direction
 - 4. scale of miles
 - 5. distance
 - 6. land forms
- C. Graphs and Charts
 - 1. Pictographs
 - 2. Line graphs
 - 3. Bar graphs
- D. Reading Skills
 - 1. General to specific
 - 2. Fact and opinion
 - 3. Classification
 - 4. Outlining

III. Unit Objectives: The student will be able to...

- 1. identify various land forms shown on a physical map.
- 2. correctly read various types of maps using map related skills.
- 3. distinguish between and read different types of maps and identify their usage.
- 4. develop an appreciation of the usefulness of maps and their importance to their lives.
- 5. read simple line graphs, bar graphs, and pictographs.
- 6. construct her own simple pictographs, bar graphs, and line graphs.
- 7. differentiate between general and specific information.
- 8. identify a factual statement and an opinion and will be able to recite the difference between the two.
- 9. identify the common characteristics from a group of objects or a list of words.
- 10. construct a simple outline.

Unit Objective #1: The student will be able to identify various land forms shown on a physical map.

A. Criterion-Referenced Objective:

1. Given a physical map, the student will be able to recognize and identify five of seven different land forms.

B. Learning Activity:

1. Students will study pictures of land forms and will identify them on a map.

Unit Objective #2: The student will be able to correctly read various types of maps using map related skills.

A. Criterion-Referenced Objectives:

1. Given a grid map, the student will be able to locate six (6) of ten specified places by using the coordinates on the map.
2. Given a map with a scale of miles, the student will be able to compute the distance between two (2) places three of five times.
3. Given a road map, the student will be able to plot the shortest distance from one location to another using given route numbers and road numbers.
4. Given a map with the appropriate symbols, the student will be able to identify six (6) of ten corresponding places on the map.
5. Using a compass, the student will be able to determine directions.

B. Learning Activities:

1. Students will create their own symbols to illustrate a map.
2. Students will use a compass to determine directions and will use this skill to orient their maps to the proper directions.
3. Students will use a simple scale of miles to determine distance from one location to another. (eg. 1 inch = 1 mile)
4. Students will learn to use a compass to determine direction of their school, their classroom, and their home.
5. Students will study a grid map and learn to locate towns by using the coordinates on the map.
6. Students will study a prepared map using symbols to illustrate houses, churches, bridges and schools.

Unit Objective #3: The student will be able to distinguish between and read different types of maps and identify their usage.

A. Criterion-Referenced Objective:

1. Students will be able to recite three (3) ways that maps can help us.

B. Learning Activities:

1. Class discussions - topics as follows:
 - a. Why Do We Need To Know About Maps
 - b. How Can Maps Help Us.

Unit Objective #5: The student will be able to read simple line graphs, bar graphs, and pictographs.

A. Criterion-Referenced Objectives:

1. Using a prepared transparency of bar graphs the student will be able to write three out of six correct answers on information given in a graph.
2. Shown a line graph, the student will be able to correctly answer three of five questions by reading the line graph.
3. Given a prepared pictograph, the student will be able to correctly answer three of six questions using the pictograph.

B. Learning Activities:

1. The student will use prepared transparencies and filmstrips to study the differences between bar graphs, line graphs, and pictographs.

Unit Objective #6: The student will be able to construct her own simple pictographs, bar graphs, and line graphs.

A. Criterion-Referenced Objectives:

1. Using the months of the year, the student will be able to construct a bar graph which will illustrate the number of students born in each month.
2. Given the temperature for ten consecutive days, the student will be able to plot six correct temperatures on a prepared line graph outline.
3. Using prepared pictures of dogs, cats, birds, etc., the students as a class will construct a pictograph illustrating the number of each animal they have as pets.

B. Learning Activities: The students will...

1. take a survey of what types of pets they have and will use this information to construct a pictograph to illustrate this information.
2. record the temperature for ten consecutive days and will use this information to construct a line graph on an outline prepared by the instructor.
3. conduct a survey on the number of students in the class born in each month. They will use this information to draw a bar graph on an outline prepared by the instructor.

Unit Objective #7: The students will be able to differentiate between general and specific information.

A. Criterion-Referenced Objectives:

1. Give two (2) dialogues the student will be able to identify which contains specific information and which contains general information.
2. Show a list of related words (eg. red, color/furniture, desk), the student will be able to identify which word gives more specific information with 70% accuracy.
3. Listening to two (2) newspaper articles read by the instructor, the student will be able to choose the one giving more specific information.
4. Given a list of three related statements, the student will be able to choose the statement containing the most specific information.

B. Learning Activities:

1. The instructor will read two (2) newspaper articles, one general and one specific. Students must choose which article is more specific and explain what words make it more specific.
2. From a list of words written on the blackboard, students must tell which words are more specific and which words are general. (eg. furniture/chair).
3. Students will read a paragraph with nine (9) words left out. Then she must add nine (9) appropriate words to make the paragraph more specific.
4. Game - "How Observant Are You?". The student must describe an object or a person she has seen that day and determine how observant she has been.
5. Students will look at pictures presented by the instructor. After looking at the pictures, she must determine what was wrong or missing in the picture.

Unit Objective #8: The student will be able to identify a factual statement and an opinion and will be able to recite the difference between the two (2).

A. Criterion-Referenced Objectives:

1. Given a list of ten factual statement and ten opinions, the student will be able to correctly identify five factual statements and five opinions.
2. The student will be able to recite three factual statements.
3. The student will be able to recite three statements and five opinions.

B. Learning Activities: Students will ...

1. discuss orally in class the definition of a fact and an opinion then he will do prepared exercises indicating which statements are facts and which are opinions.
2. examine newspapers and magazines and pick out factual statements and opinions.

Unit Objective #9: The student will be able to identify the common characteristics from a group of objects or a list of words.

A. Criterion-Referenced Objectives:

1. Given six (6) objects that are red and six (6) objects that are green, the student will be able to classify them into two groups according to color.
2. Given ten round objects and ten square objects, the student will be able to classify these objects according to shape.
3. Given a group of objects of various sizes, the student will be able to classify them according to size.
4. Given a list of twenty words, the student will correctly classify twelve or the words by listing them under heading given by the instructor.

B. Learning Activities: The students will ...

1. read a list of different kinds of transportation and will separate them into air, land or water travel.
2. be given a shopping list and must write them under the proper store headings (eg. grocery store, furniture store).
3. read a list of occupations and discuss orally where people who have these careers might work (eg. on a farm, in a factory, in the city, on water).

Unit Objective #10: The student will be able to construct a simple outline.

A. Criterion-Referenced Objectives:

1. Given three (3) topics for a simple outline, the student will be able to fill in at least three (3) sub-topics for each heading.
2. Given a list of three sub-topics, the student will be able to write an appropriate topic for the list.

B. Learning Activities: The student will...

1. make simple outlines by listing two (2) sub-topics for each topic given by the instructor.
2. write topic headings for a list of sub-topics given by the instructor.

C. Materials:

Print

1. Map Skills Project Book I, Scholastic Magazines
2. Map Skills Project Book II, Scholastic Magazines
3. You And Your World, Willeta R. Bolinger
4. Africa, William D. Allen.
5. India, T.A. Raman

Non-Print

1. Transparencies "Discovering Delaware", Scarangelo
2. Filmstrip "Graphs-Pictographs, Bar, Line, Number Pairs, Maps", Singer SVE.
3. Materials prepared by reading specialist
4. Materials prepared by instructor
5. Christiana High School Planetarium

D. Evaluation:

Pre-Test

Students will take a social studies pre-test prepared for students of all ability level. This test will emphasize map skills, graphing skills, and other basic social studies skills.

Post-Test

1. Students will take a post-test. This test will be similar to the pre-test but prepared for low-ability students.
2. Students will keep a folder of map work, graphing work, and reading work (activities) done during the unit. These folders will be evaluated by the instructor.

Unit Title: VALUES

- I. Unit Overview: The purpose of this unit is to allow low ability students a chance to examine themselves and their values. The students will describe themselves and the things they like and dislike. They will use this information to identify careers which might be suitable choices for each individual.

II. Unit Content Outline:

- A. Who Am I?
1. Physical traits
 2. Personality traits
 3. Personal values
 4. Work values
- B. Choosing A Career
1. Work values
 2. Education
 3. Technology
 4. Environment

III. Unit Objectives: The students will be able to...

1. describe herself in physical terms.
2. describe herself in terms of non-physical characteristics. (mean, kind, smart, brave, nervous, etc.)
3. identify work values important to her.
4. Students will explore interests that she already has and will relate these interests to possible career choices.
5. Based on student's identification of career values important to her, the student will be able to make a list of careers compatible with her values.
6. Students will be aware of the effects of technology on careers.
7. Students will have an awareness of the effects of environment on career choices.

IV. Unit Description:

Unit Objective #1: The student will be able to describe herself in physical terms.

- A. Criterion-Referenced Objectives:
1. Given an appropriate outline, the student will be able to list her physical characteristics with 75% accuracy.
 2. Using baby pictures, the student will be able to discuss the physical changes that have taken place since the pictures were taken.
 3. Using appropriate materials, the student will construct a time capsule containing specified personal information.

B. Learning Activities:

1. The student will describe herself using numbers only. (Height, weight, address, birth date, age, telephone)
2. Each student will bring in a baby picture of herself. Students must guess who is in the picture, followed by a class discussion of what physical changes have taken place since they were children.
3. Students will construct a time capsule to be stored and opened at the end of the year. Capsule will include pictures, personal information, newspaper articles, list of things they like and dislike.
4. Students will record their height and weight twice a month and will construct a chart to illustrate any changes that take place.
5. Students will make identification cards on an outline prepared by instructor.

Unit Objective #2: The student will be able to describe herself in terms of non-physical characteristics. (mean, kind, smart, brave, nervous).

A. Criterion-Referenced Objective:

1. Given a list of characteristics such as kind, brave, quiet, etc. The student will be able to identify which characteristics describe her.

B. Learning Activities:

1. From a blackboard list, the student will identify the ten words that best describe her.
2. Students will write a pen pal letter to someone who has never been in the United States. The letter should contain information that would tell the recipient what the student is like who wrote the letter.
3. Students will compare and discuss the following statements:
 - a. "In many ways, we are all alike".
 - b. "No two people are exactly alike".

Unit Objective #3: The students will be able to identify work values important to her.

A. Criterion-Referenced Objectives:

1. Given magazines, scissors, paper and glue, the student will construct a career collage showing at least five (5) pictures of occupations they might like to have.
2. Students will be able to list three things they think are important in choosing a career.

B. Learning Activities:

1. Students will make a career collage with pictures of occupations they might like to have.

2. From a list of work related values such as salary, fringe benefits, vacations, etc., the student will identify the three (3) most important to her.
3. Students will draw a picture of what they think they will be doing in 15 years.
4. Students will list careers under headings supplied by the instructor such as: Courageous careers, helpful careers, fun careers, etc.
5. Students will role play occupations that they think they might like to have.

Unit Objective #4: The students will explore interests that they already have and relate these interests to possible career choices.

- A. Criterion-Referenced Objectives: The student will ...
 1. be able to list at least one (1) skill or hobby that they have.
 2. be able to recite how their skills or hobbies can relate to career choices.
- B. Learning Activities:
 1. Class will have a "Show and Tell". Each student will show something that represents an interest or skill that they have. Then the class will discuss how these interests can be used as careers or lead to career choices.

Unit Objective #5: Based on student's identification of career values important to her, the student will be able to make a list of careers compatible with her values.

- A. Criterion-Referenced Objectives:
 1. Students will be able to match work values with compatible careers.
 2. Based on their values, the students will be able to list three (3) careers they might choose.
- B. Learning Activities:
 1. Students must match a list of work values with the careers that might go with them. For example:

A. Salesman	A. Summer Vacations
B. Teacher	B. Likes science
C. Geologist	C. Likes to travel
D. Nurse	D. Helping people
 2. Students will examine newspaper want ads and choose ads which fulfill their work values.

Unit Objective #6: Students will be aware of the effects of technology on careers.

- A. Criterion-Referenced Objective: The student will be able to...
 1. recite an accurate definition of technology.

2. list three (3) jobs that people do better than machines.
3. list three (3) jobs that machines do better than people.

B. Learning Activities:

1. Students will discuss what the word technology means and then complete the following activities:
 - a. Make a list of jobs that people can do better than machines.
 - b. Make a list of jobs that machines can do better than people.
 - c. Make a list of jobs where people have been replaced by machines.
 - d. Discuss how house work is easier because of machines.
 - e. Discuss how making a table is easier because of machines.
 - f. Discuss whether technology creates more leisure time.

Unit Objective #7: Students will have an awareness of the effects of environment on career choices.

A. Criterion-Referenced Objectives:

1. Students will be able to write two occupations that people in the following environments might have.
 - A. grasslands
 - B. deserts
 - C. rain forest
 - D. highlands
 - E. lowlands
2. Students will be able to list three (3) occupations that people living in the above areas would not have.

B. Learning Activities: Students will...

1. study areas of the world that have various types of environments.
2. discuss in class how environment can limit career choices.
3. list possible occupations for people living in the areas studied.
4. list careers that people living in the areas studied could not have.

C. Materials:

Print

1. "The Valuing Approach to Career Education" - Education Achievement Corporation.
2. You and Your World, Willeta R. Bolinger.
3. Africa, William D. Allen
4. India, T.A. Raman
5. "Learning About Values", Sylvia Tester

Non-Print

1. Filmstrip - "Getting to Know Me" - Eye Gate House, Inc.

D. Evaluation:

Pre-Test

1. Describe yourself by filling in the blanks
 - A. Name _____
 - B. Age _____
 - C. Color of Hair _____
 - D. Color of Eyes _____
 - E. Birth Date _____
 - F. Height _____
 - G. Weight _____
2. If you had to describe what you are like in three words, what three words would you use?
 1. _____
 2. _____
 3. _____
3. Name three ways you have changed since you were a baby.
 1. _____
 2. _____
 3. _____
4. Write three things important to you in choosing a job.
 1. _____
 2. _____
 3. _____
5. Name three jobs that people can do better than machines.
 1. _____
 2. _____
 3. _____
6. Name three jobs that machines can do better than people.
 1. _____
 2. _____
 3. _____
7. Name an occupation that people who live in the following areas might have.
 - A. Grasslands _____
 - B. Deserts _____
 - C. Rainforests _____
 - D. Highlands _____
 - E. Lowlands _____

Post-Test

1. Students will re-take the pretest. Evaluation will be based on improvement.
2. Students will keep a notebook of unit's work. These will be evaluated by the instructor.

Unit Title: COMPARING CLIMATE AREAS OF EUROPE & THE U.S.

Sub-Unit title: Mediterranean

I. Unit Overview: This unit is intended to show how one particular climate type Mediterranean influences the lives of people living within it. By exploring the climatic, topographic, and economic characteristics of the given countries, numerous career opportunities can be developed. This career and geographic information can then be compared to similar regions in the United States.

II. Unit Content Outline:

A. Area-Mediterranean

1. Spain
2. Portugal
3. Italy
4. Greece
5. Albania

B. Conditions

1. Climate
 - a. Description
 - b. Influence by latitude, position, etc.
 - c. Affect on agricultural productivity
2. Topography
 - a. Description
 - b. Affect on trade and transportation
 - c. Mining and manufacturing
3. Economic-Indirect result of climate and topography
 - a. Agricultural
 - b. Industrial
 - c. Service

C. Careers

1. Occupations related to climate and topography
 - a. Farming
 - b. Food processing
 - (1) Olive pickers
 - (2) Wine makers
 - (3) Flour milling
 - c. Fishing
 - d. Mining
 - e. Manufacturing
 - f. Etc.

D. Materials

1. Filmstrips (Coronet and Curriculum)
 - a. Seeing Italy-Land and Climate
 - b. Seeing Italy-Agriculture
 - c. Greece-Greek Farmers
2. Films (DPI)
 - a. Italy-Land and People
 - b. Spain and Portugal - Land and People
3. Textbook
 - a. Eurasia, Africa and Australia
 - b. The World Around Us

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.:
MEDITERRANEAN

4. Worksheets
 - a. Climate areas of Europe (map-Milliken 16-17)
 - b. Climate characteristics
- E. General Unit Activities:
 1. View filmstrips
 2. Reading
 3. Worksheets
 4. Map work
 5. Watch movies

III. Unit Objectives:

1. The student will be able to relate the meaning of the term Mediterranean and give examples of european countries which have such a climate.
2. The student will understand the affect that topography and latitude have on a Mediterranean climate.
3. Given the Mediterranean area, the student will be able to discuss how agricultural and industrial productivity in that area are affected by climate.
4. The student will be able to compare the way people live and work in Mediterranean Europe with life styles in similar climatic areas of the United States.
5. The student will be able to develop a list of jobs which are directly or indirectly related to a Mediterranean climate.

IV. Unit Description:

- A. Criterion-Referenced Objectives:
 1. Given a map of the six major climate areas in Europe the student will be able to list at least two characteristics of a mediterranean climate and name all the countries with such a climate.
 2. Using a physical political map of Europe the student will be able to give at least two reasons why a given area has a Mediterranean climate.
 3. Using his textbook and climate chart the student will be able to list at least five agriculture and five industrial products found within a Mediterranean area.
 4. Given a worksheet containing a column for countries in Mediterranean Europe and states in the United States, the student will list similarities in climate, products, and occupations.
 5. Using all information and resources obtained during the unit, the student will make a list of at least ten occupations which are indicative of a Mediterranean climate.
- B. Learning Activities:
 1. Map skills
 2. Reading skills
 3. View filmstrips
 4. Work sheets
 5. View movies

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.: MEDITERRANEAN

C. Materials

1. Physical Political Map
2. Globe
3. Filmstrips
4. Movies
5. Textbooks
6. Worksheets

D. Evaluation: None

MEDITERRANEAN EUROPE	UNITED STATES
Countries	States
Climate	Climate
Products	Products
Occupations	Occupations

Sub-Unit Title: MARINE WEST COAST

I. Unit Overview: This unit is intended to show how one particular climate type Marine West Coast influences the lives of people living within it. By exploring the climatic, topographic, and economic characteristics of the given countries, numerous career opportunities can be developed. This career and geographic information can then be compared to similar regions in the United States.

II. Unit Content Outline:

A. Area-Marine West Coast

1. North Spain
2. North France
3. Belgium
4. Netherlands
5. Luxemborg
6. West Germany
7. British Isles
8. Norway

B. Conditions

1. Climate
2. Topography
3. Economic

C. Careers

1. Occupations related to climate and topography
 - a. Dairying
 - b. Fishing
 - c. Lumbering
 - d. Shipbuilding
 - e. Textiles
 - f. Agriculture
 - g. Mining
 - h. Etc.

D. Materials:

1. Filmstrips (Coronet)
 - a. Seeing W. Germany-Agriculture
 - b. Seeing Great Britain-Agriculture and Fishing
 - c. Seeing Great Britain-Industry and Mining
 - d. Seeing France-Land and Resources
 - e. Seeing France-Agriculture and Fishing
2. Films (DPI)
 - a. W. Germany Land and People
3. Textbooks
 - a. Eurasia, Africa and Australia
 - b. The World Around Us
4. Worksheet

E. General Unit Activities

1. View filmstrips
2. Reading
3. Map work
4. Watch movies

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.:
MARINE WEST COAST

III. Unit Objectives:

1. The student will be able to relate the meaning of the term Marine West Coast and give examples of European countries which have such a climate.
2. The student will understand the affect that topography and latitude have on a Marine West Coast climate.
3. Given the Marine West Coast area, the student will be able to discuss how agricultural and industrial productivity in that area are affected by climate.
4. The student will be able to compare the way people live and work in Marine West Coast Europe With life styles in similar climatic areas of the United States.
5. The student will be able to develop a list of jobs which are directly or indirectly related to a Marine West Coast climate.

IV. Unit Description:

A. Criterion-Referenced Objectives:

1. Given a map of the six major climate areas in Europe the student will be able to list at least two characteristics of a Marine West Coast climate and name all the countries with such a climate.
2. Using a physical political map of Europe the student will be able to give at least two reasons why a given area has a Marine West Coast climate.
3. Using his textbook and climate chart the student will be able to list at least five agriculture and five industrial products found within a Marine West Coast area.
4. Given a worksheet containing a column for countries in Marine West Coast Europe and states in the United States, the student will list similarities in climate, products, and occupations.
5. Using all information and resources obtained during the unit, the student will make a list of at least ten occupations which are indicative of a Marine West Coast climate.

B. Learning Activities:

1. Map skills.
2. Reading skills.
3. View filmstrips.
4. Worksheets.
5. View movies.

C. Materials:

1. Physical Political Map
2. Globe
3. Filmstrips
4. Movies
5. Textbooks
6. Worksheets

D. Evaluation: None

Sub-Unit Title: Humid Continental

- I. This unit is intended to show how one particular climate type Humid Continental influences the lives of people living within it. By exploring the climatic, topographic, and economic characteristics of the given countries, numerous career opportunities can be developed. This career and geographic information can then be compared to similar regions in the United States.

II. Unit Content Outline:

- A. Area-Humid Continental
 - 1. Poland
 - 2. Romania
 - 3. Austria
 - 4. Switzerland
 - 5. Czechoslovakia
 - 6. E. Germany
 - 7. U.S.S.R.
- B. Conditions
 - 1. Climate
 - 2. Topography
 - 3. Economic
- C. Careers
 - 1. Occupations related to climate and topography
 - a. agriculture
 - b. lumbering
 - c. food processing
 - d. mining
 - e. grazing
 - f. dairying
 - g. manufacturing
- D. Materials
 - 1. Filmstrips (Coronet)
 - a. Seeing Eastern Europe-Agriculture
 - b. Seeing Eastern Europe-Industry
 - 2. Filmstrips (S.E.V.)
 - a. This is the Soviet Union-Land and Climate
 - b. This is the Soviet Union-Agriculture in U.S.S.R.
 - c. This is the Soviet Union-Science and Industry
 - 3. Film (DPI)
 - a. Soviet Union Land and Peoples
 - 4. Textbooks
 - 5. Worksheet
- E. General Unit Activities
 - 1. View filmstrips
 - 2. Reading
 - 3. Worksheets
 - 4. Map work
 - 5. Watch movies

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.:
HUMID CONTINENTAL

IV. Unit Description:

A. Criterion-Referenced Objectives:

1. Given a map of the six major climate areas in Europe the student will be able to list at least two characteristics of a Humid Continental climate and name all the countries with such a climate.
2. Using a physical political map of Europe the student will be able to give at least two reasons why a given area has a Humid Continental climate.
3. Using his textbook and climate chart the student will be able to list at least five agriculture and five industrial products found within a Humid Continental area.
4. Given a worksheet containing a column for countries in Humid Continental Europe and states in the United States, the student will list similarities in climate, products, and occupations.
5. Using all information and resources obtained during the unit, the student will make a list of at least ten occupations, which are indicative of a Humid Continental climate.

B. Learning Activities:

1. Map skills
2. Reading skills
3. View filmstrips
4. Work sheets
5. View movies

C. Materials:

1. Physical Political Map
2. Globe
3. Filmstrips
4. Movies
5. Textbooks
6. Worksheets

D. Evaluation: None

Sub-Unit Title: NORTHERN FOREST AND POLAR MARINE

I. Unit Overview: This unit is intended to show how one particular climate type Northern Forest and Polar Marine influences the lives of people living within it. By exploring the climatic, topographic, and economic characteristics of the given countries, numerous career opportunities can be developed. This career and geographic information can then be compared to similar regions in the United States.

II. Unit Content Outline:

- A. Area-Northern Forest and Polar Marine
 - 1. Norway
 - 2. Sweden
 - 3. Finland
 - 4. North U.S.S.R.
- B. Conditions
 - 1. climate
 - 2. topography
 - 3. economic
- C. Careers
 - 1. Occupation related to climate and topography.
 - a. Forestry
 - b. Trapping
 - c. Mining
 - d. Manufacturing
- D. Materials:
 - 1. Filmstrips (Coronet)
 - a. Seeing Scandinavia-Land and Climate
 - b. Seeing Scandinavia-Industry and Commerce
 - 2. Film (DPI)
 - a. Scandinavian Lands
 - 3. Textbooks
 - a. Eurasia, Africa and Australia
 - b. The World Around Us
- E. General Activities:
 - 1. View filmstrips
 - 2. Reading
 - 3. Worksheets
 - 4. Map work
 - 5. Watch movies

IV. Unit Description:

- A. Criterion-Referenced Objectives:
 - 1. Given a map of the six major climate areas in Europe the student will be able to list at least two characteristics of a Northern Forest and Polar Marine climate and name all the countries with such a climate.
 - 2. Using a physical political map of Europe the student will be able to give at least two reasons why a given area has a Northern Forest and Polar Marine climate.

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.:
NORTHERN FOREST AND POLAR MARINE

3. Using his textbook and climate chart the student will be able to list at least five agriculture and five industrial products found within a Northern Forest and Polar Marine area.
4. Given a worksheet containing a column for countries in Northern Forest and Polar Marine Europe and states in the United States, the student will list similarities in climate, products, and occupations.
5. Using all information and resources obtained during the unit, the students will make a list of at least ten occupations which are indicative of a Northern Forest and Polar Marine climate.

B. Learning Activities:

1. Map skills
2. Reading skills
3. View filmstrips
4. Worksheets
5. View movies

C. Materials:

1. Physical Political Map
2. Globe
3. Filmstrips
4. Movies
5. Textbooks
6. Worksheets

D. Evaluation: None

Sub-Unit Title: Semi Arid

- I. Unit Overview: This unit is intended to show how one particular climate type Semi Arid influences the lives of people living within it. By exploring the climatic, topographic, and economic characteristics of the given countries, numerous career opportunities can be developed. This career and geographic information can then be compared to similar regions in the United States.

II. Unit Content Outline:

- A. Area - Semi Arid
 - 1. Central Spain
- B. Conditions
 - 1. climate
 - 2. topography
 - 3. economic
- C. Careers
 - 1. Occupations related to topography and climate
 - a. herding
 - b. farming
 - c. manufacturing
- D. Materials
 - 1. Filmstrips (Encyclopedia Britannica)
 - a. Spain, Portugal and Gibraltar
 - 2. Textbooks
 - 3. Worksheet
- E. General Unit Activities
 - 1. View filmstrips
 - 2. Reading
 - 3. Worksheets
 - 4. Map work
 - 5. Watch movies

III. Unit Objectives:

- 1. The student will be able to relate the meaning of the term Semi Arid and give examples of European countries which have such a climate.
- 2. The student will understand the affect that topography and latitude have on a Semi Arid climate.
- 3. Given the Semi Arid area, the student will be able to discuss how agricultural and industrial productivity in that area are affected by climate.
- 4. The student will be able to compare the way people live and work in Semi Arid Europe with life styles in similar climatic areas of the United States.
- 5. The student will be able to develop a list of jobs which are directly or indirectly related to a Semi Arid climate.

IV. Unit Description:

- A. Criterion-Referenced Objectives:
 - 1. Given a map of the six major climate areas in Europe the student will be able to list at least two characteristics of a Semi Arid climate and name all the countries

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.
SEMI ARID

- With such a climate.
 2. Using a physical political map of Europe the student will be able to give at least two reasons why a given area has a Semi Arid climate.
 3. Using his textbook and climate chart the student will be able to list at least five agriculture and five industrial products found within a Semi Arid climate.
 4. Given a worksheet containing a column for countries in Semi Arid Europe and states in the United States, the student will list similarities in climate, products, and occupations.
 5. Using all information and resources obtained during the unit, the student will make a list of at least ten occupations which are indicative of a Semi Arid climate.
- B. Learning Activities:
1. Map skills
 2. Reading skills
 3. View filmstrips
 4. Worksheets
 5. View movies
- C. Materials:
1. physical Political Map
 2. Globe
 3. Filmstrips
 4. Movies
 5. Textbooks
 6. Worksheets
- D. Evaluation: None

Sub-Unit Title: WHAT IF . . . ?

- I. Unit Overview: Given a specified amount of time the student will develop a project based on geographic and career information.
- II. Unit Content Outline: What if you were forced to live and work in one of the countries just studied . . . What If?
 - A. Given only the countries within the climate areas studied select one in which you would like to live.
 1. Describe climate and topography
 2. Explain your choice
 - B. Make a detailed map of the area in which you wish to live.
 1. Latitude and longitude
 2. Scale
 3. Physical-Political considerations
 4. Specific location (rural, city)
 - C. Explain how you intend to make a living by choosing a career which would be conceivable in your climate area.
 1. General field
 - a. Specific job
 2. Skills needed
 3. Education needed
 4. Benefits
 5. Potential
 6. Salary
 - D. Materials
 1. Textbooks
 - a. Eurasia, Africa and Australia
 - b. The World Around Us
 2. Accumulated notes
 3. Worksheets
 4. Occupational Outlook Handbook
 5. Career materials in library
 6. Atlas
 7. Cassette - Agriculture-Careers Unlimited
 - E. General Unit Activities
 1. Development of project
 2. Using resource center
 3. Map making
- III. Unit Description:
 - A. Criterion-Referenced Objectives:
 1. Using all information gained throughout the course each student will choose one country in which he would like to live and fill in I on the project guide.
 2. Given an atlas and the graphic tools necessary, the student will make a detailed map of his chosen country incorporating all information on II of the project guide.

COMPARING CLIMATE AREAS OF EUROPE & THE U.S.:
WHAT IF . . . ?

3. Using the lists of careers developed in each unit the student will choose one career which he would like to study in depth and using the resource center complete the information on III of the project guide.

* Project guide and the course outline of the unit, What If . . . ?, are synonymous.

B. Learning Activities:

1. Map skills
2. Research in the library
3. Project development

C. Materials:

1. Atlas
2. Drawing paper
3. Resource center materials on careers
4. Project outline
5. Textbook

- D. Evaluation: Determined by the degree to which the project was completed.

WHAT IF . . . ? PROJECT GUIDE

1. Country choice
 - a. Description
 1. climate
 2. topography
 - b. Explanation of choice
2. Making a map of your chosen area
 - a. Things to include
 1. Latitude and longitude
 2. Scale
 3. Physical - Political information
 - a. rivers
 - b. mountains
 - c. boundaries
 - d. others
 4. Specifics
 - a. city or country
 - b. population
 5. Legend if necessary
3. How will you make a living?
 - a. General field - ex. Agriculture
 1. Specific job - ex. Fruit picker
 2. Skills needed
 3. Education needed
 4. Benefits
 5. Potential for advancement
 6. Salary
 7. Other information

Unit Title: YOU AS CONSUMER AND PRODUCER

- I. Unit Overview: This unit will emphasize the student's role in his natural and man-made environment. How he uses and changes his environment, particularly the natural environment, will be emphasized.

II. Unit Content Outline:

- A. The natural environment - definition and effect
- B. The man-made environment
 - 1. Definition
 - 2. Why we build
 - 3. The form of the man-made environment
 - a. limits
 - b. uses
 - c. floor plans
 - 4. How we change the man-made environment
- C. The neighborhood
 - 1. Physical limits
 - 2. Occupations found in the neighborhood
 - 3. Neighborhood relationships
- D. Gardening Project
 - 1. Division of labor
 - 2. Procuring tools and materials
 - 3. Agricultural careers
 - 4. Agriculture and technology

III. Unit Objectives:

- 1. The student will be able to manipulate physical spaces and determine their use.
- 2. The student will gather information about the school neighborhood in order to examine its characteristics.
- 3. The student will investigate simple technology by constructing and using simple tools.
- 4. The student will be able to work in cooperation with other students on a project.
- 5. The student will be able to describe jobs associated with food growing and processing.

IV. Unit Description:

Unit Objective #1: The student will be able to manipulate physical space.

A. Criterion-Referenced Objectives:

- 1. The student will be able to arrange the furniture in a classroom so that it can be used in at least two different ways.
- 2. The student will be able to draw a chart of the arrangement of the furniture in at least two rooms and orally describe their uses.

B. Learning Activities:

1. The students will arrange the classroom furniture so that it can be used for a discussion, small group work, a lecture, a movie.
2. The students will draw simple charts of at least two classrooms.
3. Environmental cubes--the students will assemble environmental cubes showing representation of the man-made environment around them. The cubes can then be used to make mobiles or possibly collages.
4. The students will construct cardboard buildings and discuss their uses.
5. The students will construct arches, domes, beams and triangles and discuss how they can be used in building.
6. The students will draw posters showing examples of how man has changed his environment.

C. Materials:

1. Our Man-Made Environment: Book Seven, published by Group for Environmental Education.
2. Worksheets
3. Classroom furniture

Unit Objective #2: The student will gather data about the school neighborhood in order to examine its characteristics.

A. Criterion-Referenced Objectives:

1. The student will be able to draw a map of the school neighborhood, showing street names and major landmarks.
2. The student will be able to draw a map of the school neighborhood, showing community services.
3. The student will be able to make a poster or collage showing occupations in the school neighborhood.
4. The student will produce a slide presentation showing his school neighborhood.
5. The student will construct a neighborhood, using construction paper, ruler, paste and scissors. They will include homes and community services, using a legend.

B. Learning Activities:

1. Neighborhood maps. The students will complete two neighborhood maps. The information can be gathered by taking a walk through the neighborhood, noting street names and location of services.
2. After touring the neighborhood, the student will complete a collage, showing the jobs people do in the neighborhood.
3. Students, working in groups of 4 or 5 will prepare a slide presentation showing the school neighborhood. They will work from a series of questions.
4. After looking at the neighborhood in a variety of ways, the students will be asked to plan their own neighborhoods. They will have to prepare a legend to show what the symbols mean and decide where to locate homes, stores, schools.

C. Materials:

1. Blank neighborhood maps
2. Paper, old magazines, paste, etc. for collages
3. Cameras, film question sheet
4. Community Workers and Helpers, group 1 and 2, SVE (filmstrip)
5. Turner, Richard. The Town You Live In, Follett Pblg. Co., New York: 1962.

Unit Objective #3: The student will investigate simple technology by constructing and using simple tools.

A. Criterion-Referenced Objectives:

1. Given materials, the student will construct a useful tool.
2. The student will complete a chart showing changes in farm power.
3. The student will complete at least one handcrafts project using yarn, cardboard, wood, etc.

B. Learning Activities:

1. Discussion and demonstration of useful hand tools.
2. Construction of hand tools from scrap materials.
3. Posters illustrating jobs that can be done by machine and by hand.
4. To compare products produced by hand or machine, the students will make butter.
5. Each student will complete at least one handcrafts project using a minimum of hand tools and materials. Students will be able to choose from the following:
 - a. weaving
 - b. crocheting and knitting
 - c. God's eyes
 - d. jewelry
 - e. quilting
 - f. embroidery
 - g. toys
 - h. dolls
6. Lecture and discussion of changes in farm power.

C. Materials:

1. Technology for Children, New Jersey State Department of Education, Division of Vocational Education.
2. Wyckoff, Joan. More Things to Make and Do, Golden Press, New York.
3. Wertenberg, Patricia Z. All Around the House, Arts and Crafts Book, Houghton Mifflin Co., Boston; 1968.
4. Read, Carl and Orze, Joseph. Art From Scrap, Davis Publications, Worchester, Mass., 1960.
5. "Developing a Tool", Changing Signals: A Highway to Work and Play, awareness level four, issue nine; McKnight Company, Bloomington, Ill.; 1973.
6. Scrap materials.
7. Peoples of the Earth V. 19: Man the Craftsman, Dunbury Press; 1973.
8. "The Story of Man and Food", Allis-Chalmers Research Laboratories; 1959.

The School Neighborhood Question Sheet

Your group is going to take pictures of the neighborhood. Be sure to take a picture to answer each question. You may use the rest of the film to take any pictures you wish to.

1. Take a picture of a home for just one family.
2. Take a picture of a building in which more than one family might live.
3. Take a picture of a place where you would take your car to get it fixed.
4. Take a picture of something a postman would use.
5. Take a picture of a place where you would buy a shirt or a dress.
6. Take a picture of something a fireman would use.
7. Take a picture of a place where you would buy a dozen eggs.
8. Take a picture of a place where you would buy a chair.
9. Take a picture of a place where you would buy medicine if you got sick.
10. Take a picture of a place where your mother would get her hair cut.
11. Have someone take a picture of the group taking the pictures.
12. Take a picture of place where you could buy a hammer.
13. Take a picture of a place where your family might eat dinner.
14. Take a picture of your school.

YOU AS CONSUMER AND PRODUCER

Unit Objective #4: The student will be able to work in cooperation with other students on a project.

A. Criterion-Referenced Objective:

1. The student will be able to divide work responsibilities when given a description of task.

B. Learning Activity:

1. The student will work on a group project to construct a mousetrap car. This project involves cooperative planning and building a small car, using a mousetrap, cardboard, nails, string, and dowelling. When the cars are complete, the students will plan and hold a race.

C. Materials:

1. Building materials for cars
2. Instructions for building cars
3. Self evaluation sheet
4. "What to do on a Rainy Day", Changing Signals: A Highway to Work and Play, awareness level four, issue twelve, McKnight Co., Bloomington, ILL.: 1973.

Unit Objective #5: The student will be able to describe jobs associated with food growing and processing.

A. Criterion-Referenced Objectives:

1. The student will be able to list at least five jobs associated with food growing and processing.
2. The student will be able to tell the story of a bean (or other vegetable) from the time it is planted to the time it appears on the dinner plate.

B. Learning Activities:

1. Presentation of agricultural and food processing careers through pictures, stories, filmstrips, and films.
2. Career bingo using farm and food processing careers.

C. Materials:

1. "The Story of Man and Food", Allis-Chalmers Research Laboratories, 1958.
2. Orr, John Boyd, The Wonderful World of Food, Garden City Books.
3. Community Workers and Helpers, SVE.
4. "On the Farm", Audobon Nature Bulletin flannel board story.

D. Evaluation:

Pre-Test

Oral definitions of words: environment, neighborhood, agriculture, technology, career

Post-Test

1. Find words asked in pre-test and circle the words in a list.
2. True-False and fill in the blank questions

YOU AS CONSUMER AND PRODUCER

Other Evaluations:

1. completed projects
2. students will keep a check list of the required activities, acceptability to be determined by the instructor.

Unit Title: CAREERS IN GOVERNMENT AND POLITICS - 1974 ELECTION

- I. Unit Overview: The purpose of this unit is to have the student learn about the election process, as a part of the operation of our local, state, and national government.

II. Unit Content Outline:

- A. The individual in Politics
- B. Political Party Organization
- C. The Political Precinct
- D. The Political Campaign
- E. Political Clubs
- F. The Political Leader's Problems
- G. Political Meetings

III. Unit Objectives:

- 1. The student will learn about the election process as a part of the operation of our government.
- 2. The student will become aware of the power the individual possess because of the right to vote.
- 3. The student will have a better understanding of political parties and how an individual becomes effective by working together with others to satisfy their needs.
- 4. The student will become aware of their local voting district as the power base of the political precinct.
- 5. The student will be able to identify major political party candidates and their platforms.
- 6. The student will be able to discriminate between county, state, and federal candidates.
- 7. The student will collect and catagorize campaign literature, newspaper clippings, editorials, cartoons, and other political material.
- 8. The student will form political clubs, elect officers and develop strategy for their candidates.
- 9. The students will write campaign slogans, make political posters and role play party rallies.
- 10. The students will conduct a mock election and learn all the steps in the process.
- 11. The student will meet individuals who are directly involved in the local election process and find out what they do.

IV. Unit Description:

A. Criterion-Referenced Objectives:

- 1. The student will be able to identify their voting districts and be able to list all the candidates and political parties up for the 1974 election. This political information will appear on each student's sample paper ballot.
- 2. The student will be able to write at least one political letter to the candidate of their choice. The letter will include the heading, the body, the salutation, and the complimentary close.

CAREERS IN GOVERNMENT AND POLITICS - 1974 ELECTION

3. The student will be able to write a paragraph listing at least three planks of their political party platform.
4. The student will be able to construct political posters which will include the candidates picture, name, party, and campaign slogan.
5. The student will be able to write a paragraph listing at least three duties involved in the jobs of each guest speaker.

B. Learning Activities:

1. Each student will go to the resource center and do the research on their political precinct.
2. Each student will construct a sample paper ballot.
3. Each student will select a party candidate on the county, state, or federal level and write a job description.
4. Each student will write a letter, construct a poster, and write slogans.
5. Each student will role play in a mock election.
6. A class trip to Wilmington and Dover--visit with the County Executive and Governor, and tour legislative halls and offices.

C. Materials:

1. A resource center in the homeroom and library for collection of voting materials, sample ballots, campaign literature, etc.
2. ACTION Course in Practical Politics.
3. Books, pamphlets, newspapers, magazines on the 1974 Election in Delaware.
4. Filmstrips, slides, movies on federal, state and county government.
5. Resource people from the community.

Unit Title: HEROES AND IDOLS

- I. Unit Overview: The program will give the student the opportunity to explore, emulate, and enjoy learning about heroes and idols. The student will be urged to develop life goals from this association.

II. Unit Content Outline:

- A. Heroes
 - 1. Historical
 - 2. Adventurous
 - 3. Folk
- B. Idols-Personal
 - 1. Why
 - 2. Whose
 - 3. Duration
- C. Life Styles
 - 1. Individual
 - 2. Cultural
- D. Cultural Styles vs. U.S.
 - 1. Africa
 - 2. Asia
 - 3. Europe
 - 4. Latin America
- E. Dramatization
 - 1. Individual
 - 2. Group

III. Unit Objectives:

- 1. The student will identify 10 heroes and state why they are heroes.
- 2. The student will be able to construct a 10 popular (top) idols chart in this area, in the world, and in his own **home** life.
- 3. The student will be able to identify six reasons why a person becomes a hero or idol.

IV. Unit Description:

- A. Criterion-Referenced Objectives:
 - 1. The student will construct three top 10 idol charts.
 - 2. The student will take part in one dramatization.
 - 3. The student will hand in a biographical brief on each of his top 10 idols.
- B. Learning Activities:
 - 1. Discuss and review famous personalities.
 - 2. Identify one personality with their own personality.
 - 3. Dramatization
 - 4. Top ten list
 - a. an area
 - b. all areas
 - c. personal acquaintances

5. Culture Mock-up
 6. Famous quotes
- C. Materials: Individual life styles as guides for development of personal career goals.
- D. Evaluation: The student will present a composition or a dramatization which will identify to the best of his knowledge the life style and incorporate his own values in one individual's life.

Unit Title: KNOWING MYSELF

- I. Unit Overview: Students will begin by examining their interests and attitudes about themselves, their capabilities and aptitudes.

After this phase--students will survey career areas compatible with their interests and aptitudes.

II. Unit Content Outline:

Students will learn more about themselves through surveys, interests, role-playing. Personality study, examination of values, beliefs about rights and privileges are among the topics to be considered.

III. Unit Objectives:

1. Students will define personality and list ways in which they can discover their own personalities.
2. Students will state two of their major goals in life.
3. Given a list of character traits, students will list those desirable and undesirable in their friends and in themselves.
4. Students will identify those character traits which contribute to future success.
5. Students will be able to interpret the results of interest tests.
6. Students will choose two careers which they would like to study in depth (based on #5) and write profiles of their careers.

IV. Unit Description:

Unit Objective #1: Student will define personality and list ways in which they can discover their own personalities.

A. Learning Activities:

1. Define: personality, need for security, behavior, non-conformist, self-conscious
2. Answer the following questions:
 - a. Explain what is wrong with this statement, "John has no personality."
 - b. Why do people seem to have more than one personality?
 - c. Why should you understand your own personality?
 - d. What steps can you take in order to get acquainted with your own personality?

3. Answer the following as honestly as you can and then write conclusions.

Question	Never	Sometimes	Usually	Always
1. I try to get recognition in ways that my teachers approve.				
2. I feel comfortable with people and enjoy their company.				
3. I feel people are friendly to me.				
4. Others seem to be happy to have me in their groups.				
5. At home I try to consider the wishes and interests of others.				
6. I try to help others have a good time.				
7. I say good things or nothing about other people.				
8. I like the community in which I live.				
9. I feel I can trust those about me.				
10. I satisfy my desires for new experiences in ways that my parents approve.				

Unit Objective #2: Students will state two of their major goals in life.

A. Criterion-Referenced Objectives:

1. After discussion and presentation of others' life goals, students will state two of their major goals in life and explain.

B. Learning Activities:

1. View the filmstrip and listen to the record "Discovering What Life's All About".
2. While viewing film, write three statements with which you agree and two with which you disagree.
3. Discuss #2.
4. Also, read and answer the following:
 - a. What are some of your goals in life? How do a person's goals affect his life?
 - b. Do you contribute to the world in which you live? How?
 - c. If not, how could you begin to make contributions?
 - d. Do you enjoy life? What are some reasons why people do not enjoy life?

5. Role-playing:

- a. Situation: You have been offered a job selling educational supplies for \$15,000 a year. You are now a teacher earning \$8,000. What would you do in this situation?
- b. Your parents want you to be a doctor, but you want to become a social worker.

Unit Objective #3: Given a list of character traits, students will list those desirable and undesirable in their friends and in themselves.

A. Criterion-Referenced Objectives:

- 1. Given a list of fifty character traits, students will list at least ten desirable traits in their friends.
- 2. Given this list of desirable and undesirable traits, students will list those traits which they feel themselves have.

B. Learning Activities:

- 1. Define and discuss the character traits.
- 2. Think of some of the best friends you have ever had. List the personality traits they had that you liked most. In another column list the traits you did not like.
- 3. Study the above lists and think about yourself. In both columns (traits liked and traits disliked) put a check by each of the traits you think you yourself have.
- 4. List ways that you could try to improve those undesirable traits you feel you possess.

Unit Objective #4: Students will identify those traits which contribute to future success.

A. Criterion-Referenced Objectives:

- 1. Given a list of words related to the topic, students will define these words and use them in discussion.

B. Learning Activities:

- 1. Define the following: goals, personality, vocation, achieve, resources, relationship, welfare, economics, majority, traits.
- 2. Make a list of five things you hope to have accomplished by ten years from now. Explain why in each instance you have this goal.
- 3. Make a list of all the things you are doing now that will help you toward the goals you have listed above.
- 4. Make a list of the things you are doing or not doing at present that hinder you in your plans for the future.

5. Watch filmstrips about "Failure: A Step Towards Growth" and answer the following questions. Teacher can use discretion as to whether this be done in a discussion or written, etc.
 - a. Explain the term "passing the buck". Give examples.
 - b. What school subjects are you afraid of failing and why?
 - c. In social situations where do you feel unsure of yourself?
 - d. Do you work better under pressure?
 - e. Do you believe that a teacher really wants a student to fail?
 - f. Name people in politics, science, art or business who were able to rise above failure and why.
 - g. What failures have you already encountered in your life and work and what have you learned from them?
 - h. Will you take an elective even if you are interested in the subject if the teacher is no-nonsense. Why? Why not?
 - i. Do you feel you know enough now to satisfy you for the rest of your life?
 - j. Do you become very upset when you fail at something? What do you do?
6. Students will identify those traits which contribute to future success.
 - a. Define success and give examples.
 - b. View filmstrip.
 - c. Discuss those opinions in the filmstrip with which you agree and disagree.
 - d. Also, answer the following questions (discussion-small group, etc.)
 1. What part does money and financial success play in your thinking about, and planning for, your career?
 2. "You have to have some kind of challenge in life". Explain this statement and tell whether you agree or disagree.
 3. What is materialism? Are you materialistic?

Unit Objective #6: Students will choose two careers to study in depth and write profiles of their careers.

- A. Criterion-Referenced Objectives:
 1. Given career areas, students will choose two careers and list them.
 2. Given these two careers, students will list significant information on a form provided by the teacher.

B. Learning Activities:

1. From the list of careers provided to you by the teacher and by searching through the reference books provided to you--list at least two careers you would like to study.
2. Write a paragraph about each describing why you have chosen these careers. Include in your paragraphs, how your discoveries about yourself contributed to your decision.
3. Outline the following facts about both of the careers:
 - a. Nature of the work
 - b. Training needed
 - c. Qualifications
 - d. Earnings and working conditions
 - e. Where to write for more information
4. Write a letter to find additional information about at least one of these careers.
5. Prepare a visual aid to advertise for one of the careers you have chosen.

C. Evaluation:

Students will be evaluated daily on the basis of participation in discussion and learning activities.

Unit Title: U S HISTORY AND GOVERNMENT

- I. Unit Overview: This course is designed to give the student the opportunity to keep abreast of his countries history and the activity of his government during the middle schools years at which there is no such program in the curriculum. Major historical happening and current government activities will be stressed.
- II. Unit Content Outline:
 - A. U.S. History
 1. Beginning to Reconstruction
 2. Reconstruction to the Present
 - B. Governmental Organization
 - C. U.S. Government Today
 - D. Careers in History and Government
- III. Unit Objectives: The student will be able to:
 1. Identify U.S. Gov't and History related careers.
 2. Identify those persons who represent him in U.S. Gov't.
 3. Construct a list of important U.S. historical happenings.
 4. The student will be kept aware of his own heritage during middle school transitory years.
- IV. Unit Description:
 - A. Criterion-Referenced Objectives: The student will:
 1. Identify 15 related careers in U.S. Gov't and History
 2. Name his U.S. Senators, U.S. Rep., Pres., V.Pres., and 5 cabinet posts.
 3. Write 15 major historical events and write a short paragraph with 10.
 - B. Learning Activities:
 1. Committee
 2. Bulletin Board Construction ie. elections
 3. Interview persons in the field
 4. School Newspaper
 5. Guest speakers
 6. Collect pictures
 7. Attend a historical society mtg.
 8. Survey the community
 - C. Materials:

Film strips:

 1. You and Your Gov't
 2. U.S. Gov't
 3. Historical Events U.S.
 4. Various U.S. Historical Phamphlets and texts
 - D. Evaluation:

The student will present a complete resume of three career selections with which he himself identifies relating to U.S. Gov't and History.

Unit Title: SEARCH FOR AMERICA

I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Search For America" gives an overview of America today. Emphasis is placed on the historical development of American society, the physical make-up of the United States, and the occupations and way of life of the people.

II. Unit Content Outline:

A. World Geography

1. Continents
2. Oceans
3. Longitude and latitude
4. Scale of miles

B. U.S Geography

1. State names and locations
2. Regions
 - a. Northeast
 - b. The South
 - c. The Middle West
 - d. The Far West

C. American Ethnic, Racial and Religious Groups

1. "The Melting Pot" theory
2. Ethnic groups, their history and contributions
 - a. Black
 - b. Brown
 - c. Native American
 - d. European
3. Social and economic problems facing ethnic, racial, and religious groups

III. Unit Objectives: The student will...

1. be able to locate continents, countries, and the states of the United States on a map.
2. be able to identify the ethnic, religious, and racial groups in American society.
3. be able to identify the problems of job acquisition among ethnic, religious and racial groups.
4. investigate the meaning of prejudice, and how prejudice affects people, and what should be done about prejudice.

IV. Unit Description:

A. Criterion-Referenced Objectives:

1. Given a map of the world, the student will be able to recognize, locate, and name the seven continents of the world.
2. Given a map and a list of state names, the student will be able to locate the fifty states of the United States.
3. Given a pencil, paper, yardstick and ruler, the student will be able to map a given area to scale.

4. Given a map, the student will be able to identify longitude and latitude lines, scale of miles, and differentiate between water and land.
5. The student will successfully complete eight of ten matching questions about people.
6. The students will successfully complete at least six out of 10 map skill activities.
7. The student will complete a series of written exercises based on reading selections about American ethnic, racial and religious groups.
8. Given an employment situation, the student will be able to identify and act out the roles of the employer and the prospective employee.
9. The student will apply his knowledge of the concept of prejudice through written responses to fictional situations in which prejudice is involved.
10. The student will apply his knowledge of prejudice by participating in the class discussion of situations in which prejudice is involved.

B. Learning Activities:

1. World geography maps: students will use wall maps, atlas', and globes to locate continents and oceans. Students who have difficulty will use a teacher prepared puzzle in which the continents are removable.
2. United States geography maps: students will use wall maps, atlas', and textbooks to locate the states of the United States. Students who show early proficiency will work on alternate activities such as regional maps showing major geographic features or enlarging United States maps using poster board and overhead projector.
3. Students will work exercises using longitude and latitude. Students will then be given a list of cities to locate by longitude and latitude position. They will also be asked to locate the city at given longitude and latitude points.
4. Students will view filmstrips showing life in various parts of the United States. They will be asked to compare their life with the way of life in other regions. In some cases this will be done in writing.
5. Station Work: students will work in various stations involving them in the history and contributions and various ethnic, racial, and religious groups. The number and variety of activities required will be determined by the ability of the student. Students who have completed the six week elective, "American Indians" or "Black America" will work on individual projects.
6. Role playing: students will participate in role playing. Fictional situations constructed by the teacher will be presented to groups of two or three students who will be asked to interpret the roles and act them out. The situations presented will involve job applicants of racial, religious and ethnic groups and the prospective employer.

7. Field Trips: Students will participate in field trips to the Amish Farm and House and the University of Delaware. After each trip they will be asked to describe what they saw. After they have completed both, they will be asked to compare the methods used at both places.
8. Pictures will be used throughout the unit to illustrate subject matter. Students will be asked to study them carefully and formulate hypotheses based on the information available.

C. Materials:
Print

1. "A Man of Courage and A Man of Peace," Scholastic Scope, January 31, 1972.
2. American Indians, Brown Studies, Black Studies, Ethnic Cultures of America Study boxes, Education Insights, Inc.
3. Documentary Photo Aids, Series Six
4. Handlin, Oscar, ". . . Out of Man: A Study Guide to Cultural Pluralism in the United States", Anti-Defamation League of B'nai B'rith, 1964.
5. Leinwald, Gerald, ed., Minorities All, Washington Square Press.
6. Mann, Arthur, "Immigrants in American Life", Houghton Mifflin Company.
7. Open Door Books, Childrens Press. These books contain short biographies of members of minority groups who have made it in various occupations.
8. Papashivily, George and Helen, Anything Can Happen, Avon Camelot Books.
9. Prejudice: The Invisible Wall, Scholastic Book Services.
10. Readers' Guide to Periodical Literature.
11. Shapiro, Alan, McCrea, Charles, and Beck, Vera, People, America Land of Change, Science Research Associates.
12. Using the Social Studies, The Laidlaw Social Science Program, Laidlaw Brothers Publishers.
13. Visual Materials, Inc. Map Reading Skills (transparencies and ditto masters).

Non-Print

1. The American Indian: Harmony and Discord, Current Affairs Films Cassette Tapes.
2. Amish Farm and House, Lancaster, PA.
3. Black and White, Simulation Game.
4. Dare to be Different, Guidance Associates Sound Filmstrip.
5. Delaware State Film Library.
6. Ghetto, simulation game.
7. Immigration and the Labor Supply, Immigrants, Second Generation Americans, Ghettos, Modern Learning Aids Filmstrips.

8. Job Opportunities Now, SVE filmstrip.
9. Learning American Negroes, SVE Cassette Tapes.
10. Newark Chamber of Commerce speaker-population mobility
11. Northeastern United States, The South, the Middle West, the Far West, SVE filmstrip sets.
12. Guest for Equality, Separate is Unequal, Martin Luther King, Jr., Encyclopedia Britannica Filmstrips.
13. University of Delaware School of Agriculture.

D. Evaluation:

1. The student will complete a map test.
2. The student will complete assigned station work. Acceptability will be determined by the teacher.
3. The student will write a short autobiographical paragraph.
4. The student will be observed in role playing.
5. The student will complete written exercises after some of the activities.

PRE-TEST

- A. Part One: Name the seven continents of the world as they are pointed to on the transparency.

1.
2.
3.
4.
5.
6.
7.

Name the other items pointed to on the overhead transparency.

8.
9.
10.

- B. Part Two: Match the following names with their importance or contribution to America.

- | | |
|--------------------------------|--|
| ___ 1. Martin Luther King, Jr. | a. I was the lead singer of the Supremes and portrayed Billie Holiday in <u>Lady Sings the Blues</u> . |
| ___ 2. Chief Joseph | b. I am the head of the National Farm Workers and led a movement to boycott grapes. |
| ___ 3. Pontiac | c. I sided with the French in the French and Indian War and was considered one of the best organizers of American Indians. |
| ___ 4. Jim Thorpe | d. In 1969, I became the first black woman ever to be chosen to serve in the United States Congress. |
| ___ 5. Cesar Chavez | e. I was known as the Moses of my people because I led so many of them to freedom. |
| ___ 6. Roberto Clemente | f. I am best known for my leadership of the Nez Perce' during their 1877 retreat. |
| ___ 7. Crispus Attucks | |
| ___ 8. Shirley Chisholm | |
| ___ 9. Diana Ross | |
| ___ 10. Harriet Tubman | |

- g. A former Pittsburgh Pirate, I died trying to bring relief to Nicaraguan earthquake victims.
- h. I was an Olympic gold medal winner in 1912.
- i. I was the first American to die in the American Revolution when during the Boston Massacre in 1770.
- j. Assassinated in 1968, I was the leader of American Civil Rights movement in the 1960's.
- B. (alternate section) show pictures of ethnic leaders, past and present.

- C. Part Three: Explain the statement "America is a melting pot" in fifty (5) words or less.

Post Test

- A. Students will be asked to re-take the pre-test and compare their scores.
- B. Students will be asked to write a paragraph interpreting a fictional job related situation similar to those portrayed in role playing.

Unit Title: GROWTH AND DEVELOPMENT

- I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Growth and Development" focuses on the individual and his relationship to society. Emphasis is placed on simple to complex relationships, both mechanical and humanistic. The concept of growth is explored from various perspectives including personal, scientific, mechanical, and societal. The student is urged to recognize the development of the decision making process as an integral part of personal and societal growth.
- II. Unit Content Outline:
 - A. The Geography of Asia
 1. Climate and rainfall
 2. Land use
 3. Bodies of water
 4. Political divisions
 5. Population
 6. Industry
 - B. Problems common to developing nations
 1. Government
 2. Economics
 3. Food
 4. Population
 5. Health
 6. Education
 7. Capital
 - C. Developing nations case studies
 1. India
 2. Japan
 - D. Cultural Comparisons
 1. Family
 2. Community
 3. Food
 4. Clothing
 5. Literature
 6. Music
- III. Unit Objectives: The student will...
 1. investigate the development of emerging Asian nations.
 2. be able to compare and contrast his life as family and community members with those of people living in developing nations of Asia.
 3. investigate cultural differences by developing class demonstrations.
- IV. Unit Description:
 - A. Criterion-Referenced Objectives:
 1. Given a map and a list of countries, the student will be able to successfully identify at least 10 countries on or around the continent of Asia.
 2. On a written test, the student will be able to list at least six (6) problems common to developing nations.

3. Using research materials available in the Instructional Media Center, the student will prepare and illustrate a written report about one Asian country, including a political map, a brief history of the country and a brief description of the economy, government and way of life of the people. The student will include a bibliography.
4. In a role playing situation, the student will identify and interpret the roles of people living in developing nations of Asia.
5. The student will participate in at least one demonstration of some aspect of Asian culture.

B. Learning Activities:

1. Map work -- The student will be expected to complete a series of map exercises. These exercises will be completed at the student's own pace and could possibly be completed at anytime during the cycle.
2. Reading activities -- The student will complete various reading assignments. In most cases, the student will be asked to complete written work sheets. These readings will come from a variety of textbooks.
3. Role playing -- Students will read selections describing the various roles in traditional Asian society. They will interpret and act out the role. They will then interpret and act out these roles as they would in their own lives.
4. Research Work in IMC -- The student will work in the IMC in order to complete a report about one Asian nation. Each student will be given specific instructions and will be expected to complete a bibliography. In addition the students will write to the embassy of the country of his choice.
5. Class demonstration -- Student groups will develop and present a class demonstration involving one aspect of Asian culture. This may be about food, clothing, any cultural aspect. Students will be encouraged to demonstrate handcrafts using primitive tools.
6. Throughout the cycle the student will view a variety of films and filmstrips.

C. Materials:

Print

1. Eurasia, Africa and Austrailia; Glendinning, Uttlev, Eiselen, Ginn and Company.
2. India, Fideler, T.A. Ramon
3. Japan, Fideler, F.R. Pitts
4. Southeast Asia; Fideler, Withington and Fisher
5. China, Wiens, Fideler
6. Asia, World Inquiry Series, Birch, McKeown, and Weitznam, Field Education Publishers, Inc.
7. The Subcontinent of India, Lengyl, Scholastic Multi-tests.

Unit Title: MAN AND THE CITY

- I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Man and the City" explores the urban environment. Emphasis is placed on the functions, problems, advantages and disadvantages, and patterns that create the city phenomena. The major concentration stresses individual problems solving techniques.

II. Unit Content Outline:

- A. Limitations of Physical Space
 - 1. Use
 - 2. Physical Boundaries
 - 3. Tradition
- B. The Growth of Urban America
 - 1. The growth of urban America, 1900-1968.
 - 2. Types of urban growth
 - a. Coastal
 - b. River
 - c. Inland
 - 3. City shapes
 - 4. Land use
 - 5. World cities
 - 6. Standard metropolitan areas
- C. Government Services
 - 1. Financial
 - 2. Urban development
 - 3. Regulatory services
 - 4. Education
 - 5. Police and Fire
 - 6. Defense
 - 7. Post Office
 - 8. Public utilities
 - 9. Public health
 - 10. Labor affairs
 - 11. Highways
 - 12. Public transportation
 - 13. Social and rehabilitation
 - 14. Courts and correction
 - 15. Parks and recreation
- D. City Planning

III. Unit Objectives: The student will...

- 1. be able to recognize how man has used and limited physical space.
- 2. be able to identify the public services necessary for urban life.
- 3. investigate the concepts of urban growth, land use, population and impact on natural environment.

8. The Rim of Asia, Kublin, Scholastic Multitext.
9. The Two Chinas, Bell, Scholastic Multitexts
10. Cultural Regions in the Eastern Hemisphere, Preston et. al., D.C. Heath.
11. Map Outlines ASIA - Milliken Publishing Company
12. Map Reading Asia, parts 1a and 2, Milliken Publishing Company

Non-Print

13. Asia, GAF Transparencies
14. Asia Series, AS-50 transparencies AEVAC, Inc.
15. Records - Stories from the Arabian Nights, Spoken Arts, Inc. Asian Folk and Fairy Tales, CMS Records
16. Living in China Today - filmstrips, SEV
17. Raj Sardana - staff member

D. Evaluation:

1. Written tests (pre and post) and daily quizzes.
2. The student will complete written assignments. Acceptability will be determined by teacher.
3. Observation of role playing.
4. Evaluation of Demonstrations: presentation, preparation, use of audio visual materials.

PRE TEST AND POST TEST

Part I -- Map Test

1. Name the following countries as they are pointed to on the map.
 - 1.
 - 2.
 - 3.
 - 4.
 - 5.

Part II -- List at least three (3) problems faced by under-developed nations.

- 6.
- 7.
- 8.

Part III -- List at least three (3) ways that the life of a Japanese teenager is different from yours. List three (3) ways in which it is the same.

- different 9.
- 10.
- 11.
- same 12.
- 13.
- 14.

A. Criterion-Referenced Objectives:

1. Give examples of spaces such as rooms, students will be able to describe them in writing according to their uses as limited by their physical boundaries and contents.
2. On a written test, the student will be able to identify the purpose and function of 8 of 10 government services.
3. The student will be able to prepare a drawing of a planned city, using the purpose and functions of government services as a guide.
4. The student will illustrate urban public services through slide pictures.
5. The student will be able to describe in writing the different types of urban growth and their impact on the natural environment.

B. Learning Activities:

1. Activities involving physical space - Students will be asked to complete various writing, reading activities in which he must describe, construct, and manipulate parts of his physical environment. For example arranging furniture, describe use of space, etc.
2. Students will write letters to departments representing the various government services. They will be expected to use the proper business letter form.
3. Reading and station work involving the various government services. A variety of speakers will be presented. In addition, the student will complete reading and writing assignments.
4. Transparency presentation of urban growth.
5. Small groups of students will be taken into the community to take pictures of the various government services as well as examples of types of homes found in the community.
6. Students will work on a series of activities leading to the planning of a neighborhood.
7. After investigation of the government services, the student will draw a model city. The student will be asked to locate various services and allocate space. Some students will take this one step further by building a three dimensional model of the city he has planned.
8. Field trip to GM plant in Boxwood. Students will participate in the field trip. When they return they will be asked to describe in writing what and who they saw.
9. Community Planning - World of Construction, McKnight and McKnight.

C. Materials:

Print

Using the Social Studies, Laidlaw

Our Man-Made Environment Book Seven, Group for Environmental Education, Philadelphia, Pennsylvania.

Non-Print

1. Social Problems of Our Environment, Eye Gate Filmstrips
2. The People Problem (filmstrip) Guidance Association
3. The Cities: People and Their Problems (filmstrips) New York Times Book and Education Service.
4. The Urban Crisis Transparencies, Newsweek
5. Law: You, the Police and Justice, Scholastic Record
6. Dignity, Friendship Press, Simulation Game
7. Ghetto, Western Publishers, Simulation Game
8. Newark Chamber of Commerce speaker on City Planning.
9. GM Corporation

D. Evaluation:

1. The student will complete his drawing of a model city.
2. Subjective evaluation of slide presentation. Students will be judged on how well their slides represent government services.
3. Students will complete written assignments. These assignments will include reactions to speakers and letters to government offices. Acceptability will be determined by the teacher.

PRE AND POST TESTS

Pre Test:

Part One: Describe the school auditorium.

Part Two: List at least five services you would expect to find in a city.

Post Test:

Part One: Describe at least two rooms. What determines their use. What are their boundaries?

Part Two: How are coastal and rivers different?

Part Three: Identify the following government services.

Unit Title: MAN AND NATURE

I. Unit Overview: The school year is divided into five cycles, four of which are the responsibility of the team. Each seven week cycle is planned around a central theme. "Man and Nature" delineates the possibilities and limitation of the natural environment. Man's relation to his natural surroundings is explored through activities designed to challenge creativity and develop methods of inquiry.

II. Unit Content Outline:

- A. Cultural Comparison - Man adapts to harsh climates.
- B. Case study - the dry regions
 - 1. Major Deserts
 - a. Names
 - b. Characteristics
 - 2. The Middle East
 - a. Countries
 - b. Geography
 - c. Way of Life
 - 1. Food
 - 2. Clothing
 - 3. Jobs
 - 4. Religion
 - d. Israel
 - 1. History
 - 2. Recent development
 - a) Kibbutzim
 - b) Niger Desert
 - 3. Oil in the Middle East
 - a. The processes of oil production
 - b. Occupations in the oil industry
 - c. Countries of the Middle East and Oil
 - 1. Saudi Arabia
 - 2. Kuwait

III. Unit Objectives: The student will be able to...

- 1. identify the major dry regions of the world by location and physical characteristics.
- 2. identify the relationship between man and his environment in the dry regions of the world.
- 3. recognize man's attempts at modification of his environment.
- 4. recognize the importance of natural resources in shaping man's life.

IV. Unit Description

- A. Criterion-Referenced Objective:
 - 1. Given a world map the student will be able to name and locate at least eight (8) of the ten largest desert regions of the world.
 - 2. On a written test the student will be able to answer 15 of 20 questions about the relationship of man and his environment in the Middle East.

3. The student will be able to list specific modifications of the environment attempted in Niger Desert, Israel, and their affects.
 4. The student will be able to identify all major processes used in the production of oil.
 5. On a true-false test the student will be able to identify eight (8) of ten jobs as being part of the oil industry.
 6. The student will be able to compare and contrast in writing, the responses of at least two (2) countries of the Middle East to the discovery of oil.
- B. Learning Activities:
1. Map Work -- a) students will work map exercises in locating and naming the world's ten largest deserts. b) students will prepare a series of political and geographic maps of the Middle East.
 2. Station Work -- Students will work assignments about Middle East in stations. There will be a specific series of activities involving the countries of Israel and Saudi Arabia.
 3. The Oil Industry -- students will read about the oil industry, visit a local refinery, and write letters to oil companies to obtain information.
- C. Materials:
- Print
1. Eurasia, Africa and Austrailia
 2. The Middle East, Lenygl, Scholastic Multitexts
 3. "The New Adventurers", Standard Oil Company (N.J.) 1251 Avenue of the Americas, New York, New York.
 4. The Lamp, Winter 1972, volume 54, number 4, EXXON
 5. "Archaeology Along the Pipeline", Robert J. Trotter, Science World, September 11, 1971.
 6. "Oil in our Community", 3rd ed., Sun Oil Company, Philadelphia, Pennsylvania.
 7. Lands of the Middle East, Social Science Staff of the Educational Research Council of America, Allyn and Bacon, L 1971.
 8. Readers Guide to Periodical Literature
- Non-Print
1. Arabian Americal Oil Company
 2. Israel Information Services, 11 East 70th Street, New York, NY 10021.
 3. World Geography, The Middle East, GAF

PRE AND POST TESTS

Pre Test

Part One: List the names of five of the ten largest deserts of the world.

Part Two: Write a paragraph of about 50 words describing how living in a dry area would make your life different then it is now.

Part Three: On the chart attached, identify each process involved in the production of oil.

Post Test

Part One: Name the major deserts of the world as they are pointed to on the overhead.

Part Two: In a paragraph describe the processes involved in the production of oil. Use a sketch if you want to.

Part Three: Listed below are statements which might apply to Saudi Arabia or Israel or both. Use an "S" if the statement applies only to Saudi Arabia, and "I" if it applies only to Israel and a "B" if it could apply to both.

Examples ___1. Monarchy

___2. Official Language is Hebrew

APPENDIX A
UNIT LISTING ACCORDING TO CLUSTERS

FIFTEEN CAREER CLUSTERS
SUGGESTED BY
THE U.S. OFFICE OF EDUCATION

Personal Services
Health
Construction
Manufacturing
Transportation
• Agri-business and Natural Resources
Public Service
Environment
Hospitality and Recreation
• Fine Arts and Humanities
Communication and Media
Marketing and Distribution
Marine Science
Business and Office
Consumer and Homemaking Education

Volume - Page

1. PERSONAL SERVICES

Health Careers	II	-	73
Food Services	II	-	199
Restaurant Operation	II	-	197

2. HEALTH

First Aid	II	-	58
Personal Health	II	-	60
Health Careers	II	-	73
Restaurant	II	-	205

3. CONSTRUCTION

Construction of a Mathematical, Scientific, or Historical Device	II	-	153
House and Community Planning	II	-	157

4. MANUFACTURING

Kinds of Work People Do	I	-	123
You as a Consumer and Producer	I	-	165
Consumer Product Testing	II	-	194

5. TRANSPORTATION

Car Service	II	-	166
Principles of Flight	I	-	99
Automobile Mechanic	II	-	125

6. AGRI-BUSINESS AND NATURAL RESOURCES

Wildlife Conservation	I	-	103
The World of Plants	I	-	49
Heredity and Environment	I	-	67
Weather	I	-	73
Plants	I	-	82
Ways with Plants	I	-	101
Comparing Climate Areas of Europe and the United States	I	-	152

7. PUBLIC SERVICE

Boating Safety and Seamanship--U.S. Coast Guard Auxiliary	II	-	246
Careers in Government and Politics 1974-Election	I	-	171
Musicians Who Teach	II	-	83
U.S. History and Government	I	-	180
Amusement-Entertainment: Gymnasitc, Wrestling and Dance	II	-	67
Communication and Media	II	-	129
Restaurant	II	-	205

8. ENVIRONMENT

The World of Plants	I	-	49
Heredity and Environment	I	-	67
Weather	I	-	73
Plants	I	-	82
Ecology in Action	I	-	94
Wildlife Conservation	I	-	103
Comparing Climate Areas of Europe and the United States	I	-	152

9. HOSPITALITY AND RECREATION

Beginning Golf	II	-	56
Creative Stitchery	II	-	195
Fly - Tying and Fishing	II	-	248
Christmas Crafts	II	-	193
Mini-Opportunities: Self Help Work Program	II	-	250
Puppetry	II	-	88
Restaurant Operation	II	-	197
Techniques of Basketball Officiating	II	-	61
The Statistician in Sports	I	-	19
Food Service	II	-	199
Recreation in America	II	-	252
Sports: Hockey, Football and Soccer	II	-	63
Recreation: Basketball, Volleyball	II	-	65
Amusement-Entertainment: Gymnastic, Wrestling and Dance	II	-	67
Fitness: Track and Field	II	-	69
Softball, Track and Field	II	-	71
Restaurant	II	-	205

10. FINE ARTS AND HUMANITIES

Photography	II	-	228
Art	II	-	91
--Lettering	II	-	96
--Printing	II	-	100
--Color	II	-	104
--Fabric Design	II	-	109
--Fashion Design	II	-	114
Musicians Who Teach	II	-	83
Puppetry	II	-	88
They Sell Music	II	-	79
Christmas Crafts	II	-	193
Creative Stitchery	II	-	195
Interior Design	II	-	123
Puppetry For Fun	II	-	145
Simple Puppets and Puppetry	II	-	149

11. COMMUNICATION AND MEDIA

Photography	II	-	228
Art	II	-	91
--Lettering	II	-	96
--Printing	II	-	100
--Color	II	-	104
--Fabric Design	II	-	109
--Fashion Design	II	-	114
Newspaper Arts and Crafts	II	-	24
Newspaper Elective	II	-	26
Short Story Writing for Children	II	-	30
Sign Language	II	-	32
Signing	II	-	34
Writing for Fun and Profit	II	-	53
Cartooning	II	-	119
Communication and Media	II	-	129
Graphic Communication	II	-	161

12. MARKETING AND DISTRIBUTION

A Means for Satisfying Human Wants	I	-	105
Kinds of Work People Do	I	-	123
Getting What We Need	I	-	130
Using Government to Solve Worker's Problems	I	-	137
Mini-Opportunities: Self Help Work Program	II	-	250
Restaurant Operation	II	-	197
They Sell Music	II	-	79
Writing For Fun and Profit	II	-	53
Food Service	II	-	199
Car Service	II	-	166
Everyday Mathematics: Measurement and Spending			
Money	I	-	11
Basic Skill Unit (Social Studies)	I	-	141
Values	I	-	147
You As Consumer And Producer (S.S.)	I	-	165
You As Consumer And Producer (Lang. Arts)	II	-	9
A Means For Satisfying Human Wants	I	-	105
Kinds of Work People Do	I	-	123
Getting What We Need	I	-	130
Using Government to Solve Worker's Problems	I	-	137

13. MARINE SCIENCE

Oceanography	I	-	96
Ways With Plants	I	-	101
Ecology in Action	I	-	94
Fly - Tying and Fishing	II	-	248

14. BUSINESS AND OFFICE

A Means for Satisfying Human Wants	I	-	105
Kinds of Work People Do	I	-	123
Getting What We Need	I	-	130
Using Government to Solve Worker's Problems	I	-	137
How Banks Serve You	I	-	2
Mini-Opportunities: Self Help Work Program	II	-	250

15. CONSUMER AND HOMEMAKING EDUCATION

A Means for Satisfying Human Wants	I	-	105
Kinds of Work People Do	I	-	123
Getting What We Need	I	-	130
Using Government to Solve Worker's Problems	I	-	137
How Banks Serve You	I	-	2
Happy Homemaker	II	-	169
Art	II	-	91
--Self Awareness	II	-	91
--Lettering	II	-	96
--Printing	II	-	100
--Color	II	-	104
--Fabric Design	II	-	109
--Fashion Design	II	-	114
Restaurant Operation	II	-	197
Food Service	II	-	199
Car Service	II	-	166
Basic Skills Unit (Social Studies)	I	-	141
Values	I	-	147
You As A Consumer And Producer (S.S.)	I	-	165
You As A Consumer And Producer (Lang. Arts)	II	-	9
Christmas Crafts	II	-	193
Consumer Product Testing	II	-	194
Creative Stitchery	II	-	195
Interior Design	II	-	123
Knowing Myself	I	-	175
Selling Yourself	II	-	28
Who am I and What Can I do about it?	II	-	51

APPENDIX B
UNIT AUTHOR AND SCHOOL

<u>Unit No.</u>	<u>Author</u>	<u>Middle School</u>
A - 1	Jim Owens	Central
A - 9	Jack Chelucci	Ogletown
A - (10-13)	Carol Mentzer	Gauger
B - 1	Butch Read	Central
B - (2-4)	Jenny Fulton, Kathy Holmes	Gauger
B - 5	Tom Hickey	Ogletown
B - 6	John Strein	Ogletown
B - 7	Bill Reister	Ogletown
B - 9	John Strein	Ogletown
B - 10	Tom Hickey	Ogletown
C - 1-4	Tom DeForrest	Central
C - (7-8)	Debbie Harrington	Gauger
C - 9	Dave Rudisill	Central
C - 10	Cathy Waller	Gauger
C - 11	Greg Yulduzian	Gauger
C - 14	Frank Fitzgerald	Ogletown
C - 16	Carol Pfuhl	Ogletown
C - 22	Frank Fitzgerald	Ogletown
C - (25-28)	Cathy Waller	Gauger
D - 1	Leslie Morrill	Central
D - 3	Cathy Waller	Gauger
D - 5	Carol Pfuhl	Gauger
D - 7	Frank Bradley	Ogletown
D - 8	Linda Stigile	Ogletown
D - 10	Linda Stigile, Sharon Spingler	Ogletown
D - 11	John Evans	Ogletown

<u>Unit No.</u>	<u>Author</u>	<u>Middle School</u>
D - 12	Greg Schneck	Ogletown
D - 13	Lewellen Bowen	Ogletown
D - (14-17)	Diane Molitor	Gauger
D - 18	Frank Bradley	Ogletown
D - 19	Sharon Springler	Ogletown
E - 1	Elwood Statler	Ogletown
E - 2	Joe Tabo	Ogletown
E - 6	Elwood Statler	Ogletown
E - 8 - 12	Arlis Odom	Central
E - 13	Honey Vickers	Central
F - 1 (Music)	Bernard Kosc	Ogletown
F - 2 (Music)	Bernard Kosc	Ogletown
F - 1 (Theatre)	Lowellen Bowen	Ogletown
F - (2-7) (Art)	Marie McCaffey	Gauger
F - 8 (Art)	Dan Chapman	Ogletown
G - 1 - 2 (I.A.)	Greg Schneck	Ogletown
G - 3 (I.A.)	Paul Devine	Central
G - 4 - 8 (I.A.)	Bob Rumsey	Gauger
G - 10 (I.A.)	Raj Sardana	Gauger
G - 1 (H.E.)	Karen Cook	Gauger
G - 2 (H.E.)	Judy Walls	Ogletown
G - 3 (H.E.)	Raymond Kendzierski, William Reister	Ogletown
G - 4	Judy Walls	Ogletown
G - 7	Judy Walls	Ogletown
G - 8	Raj Sardana	Gauger
G - 9	Margeret Dilavra	Central

<u>Unit No.</u>	<u>Author</u>	<u>Middle School</u>
H - 1	Dave Rudisill	Central
H - 2 - 3	John Evans	Ogletown
H - 4	Greg Yulduzian	Ogletown
H - 7	Dan Chapman	Ogletown